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CONTENTS OF NO. III., VOL. XXI.

ARTICLES.

MERCANTILE LAW CASES.

COMMERCIAL CHRONICLE AND REVIEW:

EMBRACING A FINANCIAL AND COMMERCIAL REVIEW OF THE UNITED STATES, ETC., ILLUSTRATED WITH TABLES, ETC., AS FOLLOWS:

HUNT'S

MERCHANTS' MAGAZINE

AND

COMMERCIAL REVIEW.

SEPTEMBER, 1849.

Art. I.—THE CONSULAR, OR COMMERCIAL CITIES OF CHINA.*

NUMBER I.

CANTON, AMOY, FOOCHOO, NINGPO, AND SHANGHAI.

CANTON.

PROVINCE OF CANTON—POSITION OF THE CITY—WHAMPOA—CLIMATE OF CANTON—APPEARANCE OF THE CITY AND ITS ENVIRONS—CHARACTER OF THE PEOPLE—PIRACY—CHINCHEW MEN—TRADE WITH THE INTERIOR—COASTING TRADE—EARLY TRADE OF EUROPEANS WITH CANTON—TRADE OF THE UNITED STATES—ARTICLES OF COMMERCE—MANUFACTURES—WAGES OF LABOR AND COST OF SUBSISTENCE—BANKING AND CURRENCY—AMERICAN BENEVOLENCE.

Towards the close of the war between Great Britain and China, Commodore Kearney obtained a promise from the Chinese Government, that whatever commercial privileges might be conferred by treaty upon the English, should also be granted to the people of the United States. Accordingly, the treaty made by Mr. Caleb Cushing, in 1844, gave permission to our citizens to dwell and trade in the five ports which had already been thrown open to the commerce of Great Britain. These ports, Canton, Amoy, Foochoo, Ningpo, and Shanghai, are scattered along a line of coast about eight hundred miles in length, at distances of from one to three hundred miles from each other. They are the principal depots of the coasting, as well as the foreign trade of China. We propose to give a brief account of the character, appearance, and commercial and manufacturing industry of each of them.

Canton. The province of Kwantung, or Canton, of which Canton is the chief city, is a mountainous district, extending about five hundred miles along

* China: Political, Commercial, and Social. By R. Montgomery Martin, Esq., late Her Majesty's Treasurer for the Colonial Consular and Diplomatic Services in China, and a Member of Her Majesty's Legislative Council at Hong Kong. 2 vols. London: James Madden.
Consular Cities of China. By Rev. George Smith, M. A., of Magdalen Hall, Oxford. New York: Harper & Brothers.

the southern coast of China. It is well watered, and its numerous streams form the avenues of an extensive internal traffic. Its soil, like that of every other part of the empire, is carefully cultivated. Its valleys are fertile, and even its rocky hills are made productive. Terraces of earth are piled upon their sides, one above another, to the very summit. These are tilled, and each supports the vegetation of a distinct climate.

The natural products of the district are gold and precious stones, iron, copper, pewter, quicksilver, coal, silk, pearls, saltpeter, various kinds of wood, and numerous fruits and vegetables. Upon the coast there are many excellent harbors. Fish abound in the neighboring waters, and are an important article of trade and consumption throughout the country. The province contains upwards of nineteen millions of inhabitants.

The city of Canton lies in latitude 23° 7′ 10″ north; longitude 113° 14′ 30″ east from Greenwich. It is built upon the northern bank of the Choo-Keang, or Pearl River, about sixty miles above the Bogue, or Bocca Tigris, which is considered the mouth of that river. The Bogue forms the apex of a triangular bay, or Delta, opening into the China Sea. In the eastern angle of this bay is the island of Hong-Kong, the commercial station of the English; and, in the western, the peninsula of Macao, which has been in the possession of the Portuguese ever since the year 1556. The population of Canton is variously estimated, but probably does not differ much from a million and a half.

Whampoa, the anchorage of foreign vessels trading with Canton, is about fourteen miles to the eastward of the city. It is a large and safe harbor, land-locked, and surrounded by beautiful scenery. The neighboring inhabitants supply the ships with an abundance of vegetables, fruits, fish, meat, and poultry.

The climate of Canton is more temperate than is usual in so low a latitude, and the city is generally healthy. To the natives of Europe and the United States, however, the steady, uninterrupted heat of the long summer season is almost intolerable. From early in June, till the close of September, the temperature scarcely varies. The average hight of the thermometer, during this time, is 82° farenheit; and the difference between the heat at noon, and at midnight, is seldom greater than 7°. The air, however, is purified by frequent rains. Throughout the season, a shower falls about every other day.

From November to February, vegetation ceases; there is little rain, and the thermometer ranges from 35° to 70°. Snow sometimes falls, but so rarely, that it is regarded as ominous of evil.

There is little in the appearance of Canton that can be pleasing to the eye of a European. The city stretches along the river for a considerable distance, and, at one point, rises upon a hill 250 feet high, but its aspect is monotonous. The houses are of a uniform hight, and are all constructed in the same style, and of the same material, and there is nothing, except the turrets of a few mosques and pagodas, to give variety to the scene.

To the north, and north-east of the city, a range of bold hills is visible. To the south, as far as the sea, the ground is level, and is interlaced by numerous rivers and canals. The plains around are all highly cultivated.

In front of the city, the river is three or four furlongs wide. Here the scene is always animated. Multitudes of Chinese boats are passing to and fro, while those which are stationary, are moored so as to leave long and regular streets between them. There are 80,000 of these boats upon the

river, and, it is estimated that one-fifth of the people of Canton, or not less than 250,000 persons, have their permanent residence in them. Besides these floating houses, thousands of eastern trading vessels are anchored in the stream. These, with their brilliant colors and fantastic shapes, present a striking contrast to the stately and compact structures that lie in the harbors of Europe and America.

The city proper is surrounded by a wall, from thirty to forty feet in thickness, and about twenty-five feet high. This wall is six miles in circuit. Its foundations and arches are built of sand stone, the remainder is of brick. Upon the top, is a line of battlements, with frequent embrasures. The city has sixteen gates, which, during the night, are closed and guarded. It is very rarely that a European ventures within the walls. The natural hostility of the Chinese against strangers, is fostered by their Tartar rulers, and, doubtless, adds much to the stability of the empire. If the subject people should become aware of the weakness of their masters, as compared with the western nations, they would soon grow uneasy under the yoke which they now bear so patiently.

At least two-thirds of the population of Canton live in the suburbs, without the walls of the city. Here there are numerous canals, which are constantly covered with boats laden with passengers and goods. Although there are many natural springs in the city, the inhabitants depend, for their supply of water, mainly upon the river and canals.

The streets of Canton, like those of most eastern cities, are very narrow, being seldom more than eight feet in width. Goods are carried through them by porters, who divide their load into two portions, each of which is attached to the end of a pole, balanced upon the shoulder. Through the hours of business, the streets are thronged by these porters, and by itinerant mechanics, and traders of every description. In every open space, traveling doctors are heard, extolling the virtues of the nostrums they offer for sale; barbers are seen shaving the crowns of the poorer citizens; fortune-tellers, and the exhibiters of street shows, carry on their vagrant occupations, and crowds of people are indulging in the national vice of gambling. Every part of the city abounds in blind beggars. The crowded dwellings, and filthy habits of the poor, make diseases of the eye and skin frightfully prevalent.

The shops of Canton do not differ much from those of European cities. They are usually large, well stocked with goods, and decorated with gaudy signs and emblems.

The houses are constructed of a bluish colored brick, and are seldom more than one story in hight. A terrace is often built upon the roof, where the family pass the warm summer evenings. The chambers of the women are in the rear of the house, and usually have a covered court, and a porch between them and the street.

The residences and factories of foreigners are limited to a few feet along the bank of the river. This space, called the "Hongs," is crossed by two streets, China-street, and Hog-Lane. The latter appears to have a good title to its name. Mr. Martin says that it is not easy to describe it "by any standard of comparison, as nothing so narrow, or so filthy, exists in any European town."

The people of Canton have the reputation of being the most vicious and turbulent in the empire. The city is said to be a favorite retreat of all whose crimes have made it necessary for them to leave their native homes. Intelligent natives, however, assert that the vices of the Cantonese are the result

of the wealth which commerce brings to the city; and they claim that the higher classes of the population surpass all others in the empire in enterprise and intelligence.

The maritime population of Canton, and of the neighboring provinces upon the coast, is much addicted to piracy. Vessels and boats passing along the shore, are often attacked and plundered. Not unfrequently, whole villages are attacked by the crews of piratical junks, who carry off all the movable property, and often take away young girls to be sold as slaves.

The number of junks in use by the pirates, in 1810, was 500, and upwards. In size, they were from 100 to 300 tons, and the largest of them carried 200 men.

A large number of the Chin-Chew men are settled in Canton. These people are the bravest, and most enterprising portion of the Chinese. Their native country is a small and sterile district upon the southern coast. A large proportion of the men leave their homes in early life, and they are to be met with in all parts of the empire. The imperial and mercantile navies are manned by them; and the commerce, banking, and manufactures of China, are almost entirely under their control.

The trade of Canton with the interior is very large. Articles of merchandise are sent here from every part of the empire, for manufacture, consumption, and export. From the northern provinces comes dates, raisins, and other fruits, drugs, ardent spirits, and wines, skins, venison, tobacco, and ginseng; from the west, gold and precious stones, iron, tin, brass, quicksilver, tobacco, and musk; from the south, iron, brass, minerals, grass cloth, woolen and cotton cloth, paper, lacquered ware, peacocks' feathers, sugar, tobacco, rice, camphor, and indigo; and from the east, porcelain, silks, coarse cloths, hemp, paper, fans, singing-birds, dates, hams, honey, and wines. Most of the black teas are brought from the province of Fookein, on the south-east coast. Green teas come chiefly from Ganhwuy, and Kangsoo, immediately north of Fookein.

In return for these articles, Canton sends to the interior cotton and woolen cloths, clothing, clocks and watches, books, tobacco, and wines.

The coasting trade of Canton is also large. The value of its shipments to the ports of China is not less than $8,000,000 per annum. They consist chiefly of sugar, cotton, and indigo, and of the manufactures of the province of Kwantung.

The trade between China and the adjacent countries, in the hands of the Chinese, employs two hundred junks. The total measurement of the foreign shipping of the empire, is from 70,000, to 80,000 tons.

Until the year 1844, the trade of the western nations with China was carried on almost entirely through Canton. That city was probably selected for the purpose, on account of its situation at the very extremity of the empire. In the year 620 of the Christian era, it was made a regular commercial port. In 700, its trade was put under the supervision of an imperial officer of the customs.

Early in the sixteenth century, the Portuguese commenced their trade with Canton, Amoy, Ningpo, and Chusan. It is said that the rocky peninsula on which Macao is built, was bestowed upon them as a reward for the energy and success with which they attacked the pirates on the coast. The Portuguese were soon followed by the Spaniards and the Dutch.

The trade of England with China commenced about the beginning of the seventeenth century. In 1670, the English East India Company had a factory

at the island of Formosa; and in 1700, private merchants had one at Chusan. It was but a few years after this, that, by the policy of the Tartar conquerors, foreign trade was restricted to Canton.

The trade of the United States with China began immediately after the close of the Revolution. The first ship engaged in it was the Empress of China, commanded by Captain John Green. She sailed from New York in February, 1784, and arrived at Whampoa in the following August. Her supercargo, Major Samuel Shaw, of Boston, was in 1786 appointed Consul of the United States at Canton, and was the first person who ever held that office. The journals of Major Shaw have recently been published. They contain a full and intereresting account of this pioneer voyage.*

Since that period, the trade of this country with China has greatly increased, and it is now second only to that of England. During the European wars, the Americans became the chief carriers of tea, and other eastern products, and this trade they still in some measure possess. In 1844, the number of American ships in Canton was 57, measuring 23,273 tons. In 1845, their number was 83, measuring 38,638 tons. The imports into Canton under the American flag in 1844, amounted, in value, to $1,300,000; the exports to $6,700,000. The corresponding values for 1845, were, imports, $2,500,000; exports, $8,000,000.

The principal articles which the Americans send to China, are bullion, opium, English woolens, American cottons, cotton, rice, furs and skins. Our imports from China consist of teas, silks, sugar, cassia, camphor, and many articles of fancy manufacture.

We give below some account of a few articles that enter into the trade of Europe and America with China. Among the exports from China are the following:—

Oil of Aniseed. About 200 peculs of this are annually sent to Europe and the United States. The pecul is 133⅓ pounds. The cost of the article is about $110 per pecul.

Chinaware. At its introduction into Europe, Chinaware was in great demand, and brought enormous prices. At present, little is exported, and that is of an inferior kind. The value of the exports is about $50,000 per annum.

Curiosities. Various fancy articles, such as screens, fans, vases, lacquered ware, carved ivory, &c., are exported in large quantities to Europe and America. In 1836, the number of bamboo fans shipped to North and South America, was 37,000,000. Their cost in China was a dollar and a half per thousand.

Mats. Upwards of 10,000 rolls of matting are annually sent to the United States. Each roll contains forty yards. The cost is about four dollars a roll.

Pictures. Pictures upon rice paper are exported in large quantities to South America. The paper which bears this name, is made of the pith of a plant, not of rice.

Preserves. The Chinese candy almost everything that is eatable. They export to India, the United States, and South America, about 10,000 boxes of preserves, valued at $50,000. Each box contains 25 catties, the catty being 1⅓ pounds avoirdupois.

Silks. Silk thread, ribbons and piece goods are largely exported to

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* For a short sketch of this voyage, see the *Merchants' Magazine* for January, 1848.—Ed.

America. The exports of raw silk, (the best kind of which is that of Nankin,) are chiefly to England.

Soy. This sauce is made from the Dolichos bean, which grows only in China and Japan. The beans are boiled soft with wheat and barley, and then left to ferment. When fermented, salt and water are added to them, and the liquor is pressed and strained. The Chinese soy is inferior to that of Japan. Large quantities are brought here and to England.

Tea. The importation of tea into Europe was commenced by the Dutch East India Company, in the early part of the seventeenth century. In 1660, when the cost of tea at Canton was no greater than now, its price in England was three guineas a pound. So small was the quantity used at that period, that an importation into England of 4,713 pounds in the course of one year, completely glutted the market, and during the six years following, only 318 pounds were imported.

The average annual consumption of tea at the present time in Europe, America, and the British possessions, is estimated to be about 70,000,000 pounds. The people of England and her colonies consume upwards of two-thirds of this amount. The quantity used by the people of this country is about 7,000,000 pounds. In South America and the southern countries of Europe, tea is not a favorite beverage, and but little is consumed.

The exports of tea from Canton, in United States vessels, in 1844, was 14,000,000 pounds. In 1845 it was 21,000,000 pounds. A considerable portion of this goes to Europe and to South America.

Besides these articles, exports are made to all parts of the world, of bamboo, and bamboo ware, cassia, grass cloth, tortoise shell ware, marble slabs for pavements, &c., &c. South America receives large quantities of grass cloth, nankeens, silver and gold ware, and mother of pearl.

The following are some of the articles sent to China under the flag of the United States:—

Cochineal. About 40,000 pounds of Cochineal are imported from Mexico in vessels of the United States. This article is indispensable in the dying of silks, and will probably, before long, be produced in China.

Cotton. The imports of American cotton into China are rapidly increasing. It can be afforded at a lower price than the cotton of the British East Indies.

Manufactured Cotton. The imports of American cotton goods, have, of late years increased more rapidly than those of Manchester. In domestics, the Americans surpass all their competitors.

French chintzes and cambrics are preferred by the Chinese to those of other nations. The imports of cotton yarn and thread, and of fine cotton cloths, are mostly from England.

Ginseng. The foreign trade in this product is confined to the Americans. In 1843 the imports were 3,000 pecules, at $48 per pecule. Sixty years ago, the price of the article was three or four times as great.

Rice. Rice is the most important article of food consumed in China. It is produced there in great quantities, and about 55,000,000 pounds are imported from abroad. The importation from America is on the increase.

Lead and Tin. There is a large and constant demand for lead, which is chiefly used in lining tea chests, and camphor boxes. The trade was formerly entirely in the hands of the English; but the mines of Missouri furnish the metal at a rate so much cheaper, that the English lead can no longer be imported with advantage. The annual value of the imports is $120,000.

A considerable quantity of tin plates is brought from England and the United States.

MANUFACTURES. The products of the manufacturing industry of Canton, and of Fushan, a large town a few miles to the west, are very great. The machinery in use is generally of the simplest character, and most of the articles manufactured are to be classed among the essential comforts of life.

About 17,000 persons, of all ages and both sexes, are engaged in weaving silk. Over 50,000 are employed in weaving cloth. The latter occupy 2,500 shops. Workers in iron, brass, and stone, are very numerous. The number of barbers is estimated at 7,000; the number of shoemakers at 4,500. Printing and book making employ a large number of persons. The workers at each trade are united into a guild, as was formerly the case in the countries of Europe.

The principal articles of Chinese manufacture, which are conducive to luxury, are silks, porcelain, lacquered ware, and such ornaments of dress as embroidery, spangles, &c. Glass was formerly imported in large quantities, but the Chinese have now attained so much skill in the manufacture, as to be able to export it. A large number of people are employed in the gold, silver, and coal mines of various parts of the country. It is said that no part of the world is so well supplied with coal as China. The art of mining there is still, however, in its rudest state. The manufacture and conveyance of salt employ a larger number of persons than any other branch of industry. The sale of salt has, from the earliest times, been a government monopoly.

WAGES OF LABOR AND COST OF SUBSISTENCE. The wages of the lowest descriptions of labor at Canton, are about 6 cents a day, and food. A field laborer receives about 14 cents a day. Weavers of cotton and silk earn from two to three dollars a month; artisans, such as carpenters, blacksmiths, &c., from four to seven dollars; clerks and accountants, from five to ten dollars.

The price of beef at Canton is about thirteen cents a pound; mutton, twenty-two cents; pork, nine cents; hens, nine cents; fish, from two to twenty cents. Turnips are about one cent a pound; Irish potatoes, from two to three cents; sweet potatoes, from one-half to one cent; rice, one to one and a half cents; cotton garments cost from four to eighteen dollars a piece; silk dresses, from ten to twenty dollars.

The rent of a house, containing five or six rooms, and capable of accommodating ten or twelve people, is about $100 per annum. A laboring man can be comfortably supported for from two to two and a half dollars a month. This includes rent and clothing. The necessary expenses of a family of ten persons, in the lower walks of life, will not exceed four hundred dollars per annum.

BANKING AND CURRENCY. Paper money is said to have been in use in China as early as the year 119 before Christ. Banking houses exist in most of the large towns. The banks are usually well conducted, and command great confidence. They advance money on securities, discount their own bills and those of each other, receive deposits payable on demand, and take money for a fixed time, at rates of interest not exceeding 1 per cent a month. The Canton banks do not issue notes payable on demand.

Bills of exchange, and promissory notes are used as securities for the payment of money, and pass from hand to hand. The mode of transfer is different from ours. Instead of indorsing the bill or note, the payee attaches to it a piece of paper, upon which he writes his name, and the circumstances of the transfer. At maturity, all the parties whose names are upon the instrument, usually call together upon the maker or drawee for payment.

The rate of interest is limited by law to 3 per cent a month. This enor-

mous rate, however, is only obtained where the law is very hazardous. The discount upon notes is seldom more than 1 per cent a month. Another restriction upon the amount of interest to be received, is this: that upon a settlement, no matter how long the loan may have run, the creditor is not allowed to take a greater sum than twice the principal.

The total value of the metallic circulation of China is estimated at $500,000,000. False money is very plenty, and officers are appointed by the government to decide upon its value.

The quatity of silver hoarded in China is supposed to be very great. The amount exported for opium is probably made up by the proceeds of the mines, and very little is manufactured into plate. To increase the quantity in the country, the foreign trade has been introducing coin and bullion for more than a century. It is estimated that a hundred million dollars have been imported from the United States since 1784.

Mr. Martin speaks in the following terms of praise of the exertions which have been made by the citizens of this country in behalf of the people of China:—

"The intercourse between the United States Government and China has been purely commercial, but great credit is due to American citizens for their philanthropic and Christian exertions in China. They have been the chief, if not sole promoters of that excellent establishment, entitled the "Medical Missionary Society," which has now hospitals at each of the opened ports in China, where the sick and diseased are cured, and their hearts prepared by kindness and skill, for the reception of the truths of Christianity. That estimable man, Dr. Parker, has founded a noble hospital at Canton, which I visited, and saw the remarkable effects of his surgical skill in active combination with his missionary efforts. The Right Rev. Dr. Boone, Bishop of the American Episcopalian Church, is now in China, aided by several excellent male and female missionaries."

Of the course pursued by our government, in respect to the American trade with China, the same writer says:—

"The United States Government in their treaty with China, and in vigilant protection of their subjects at Canton, have evinced far better diplomacy, and more attention to substantial interests, than we have done, although it has not cost them as many groats as we have spent guineas, while their position in China is really more advantageous and respected than that of England, after all our sacrifices of blood and treasure, as will be subsequently demonstrated."

Art. II.—THE COAL TRADE OF THE UNITED STATES.

The labor and capital employed in the coal regions of the Union, exceed, in amount, the enterprise which is directed to any other mining interest of the country. The great magnitude of those coal fields, their productiveness, and the measure of industry to which they afford profitable occupation, induce us to enter into a consideration of the origin, progress, and present condition of the coal trade. Although it is but a recent period, comparatively, since it was commenced, it has already grown to a trade of immense value, the anthracite yielding an annual amount of more than twelve millions of dollars. It is essential to the production of iron; and is connected, in a greater or less degree, with almost every branch of agriculture, manufacture, and the mechanic arts. Besides, its importance is increasing with the advancing improvements, and

augmenting population of the nation. It is our design, aided by the records which are before us, and our own observation, while journeying through the coal producing regions, to exhibit a general view of those particular tracts which embrace the coal districts, the circumstances bearing upon the mining of this product, and its distribution to the various markets in which it is required.

Although it is but a short period since the mining of coal has been successfully prosecuted, the existence of this product was early known to the French explorers, during their early migrations around the shores of the north-western lakes. In the year 1679, Lewis Hennessin, a Catholic missionary, whose accuracy in some points has, however, been questioned, yet who accompanied the first exploring expedition which navigated Lake Erie, alludes to a coal mine upon the Illinois River, near Fort Crevecœur, almost a century before the coal of Pennsylvania was discovered, and the place of its location is designated upon the map accompanying his journal. He remarks that, in the country now constituting Peoria, "there are mines of coal, slate, and iron, and several pieces of fine red copper, which I have found now and then upon the surface of the earth, make me believe that there are mines of it."* This is the first notice of the existence of coal upon the domain now constituting the United States, which is known to be upon record.

The region comprising the great Alleghany bituminous coal field, as well as the anthracite districts of Pennsylvania, were, at a much later period, but partially known, for they had been imperfectly explored. Although a considerable portion of the former had been nominally divided into several States and territories, it still continued in the possession of the Indian tribes, until the middle of the eighteenth century. Nor was it deemed of much value by those who succeeded the aboriginal possessors of the land. No part of the anthracite districts, or of the Alleghany bituminous coal region of Pennsylvania, was included in the purchases that were made by William Penn and his family by the proprietaries, until the year 1749. During this last period, a portion of the former tract was bought. In the year 1768, the proprietary, by the last treaty that was made, came into the possession of nearly the whole bituminous coal land of Pennsylvania, namely, "a tract lying between Lycoming Creek, the north branch of the Susquehanna, and the head waters of the Alleghany River, down to the Ohio, for the sum of *ten thousand dollars.*† The existence of coal at certain points soon became known, and upon the maps which were published during the year 1770 and 1777, the position of coal mines is marked upon the Ohio side of the river, as well as in other places in that part of the country. Nor was the anthracite region of Pennsylvania more fully known. Its rugged, sterile, and broken hills had received the name of "The Wilderness of St. Anthony," a region whose mineral resources have been rapidly developed to such an extent, that during the year 1847, it had furnished about three millions of tons of this product, and had supplied a million and a quarter of tons to seven thousand four hundred and thirty-nine vessels, which departed that year from the port of Philadelphia, in order to distribute them abroad.

We propose, first, to allude to the great Alleghany bituminous coal field, extending through parts of the States of Alabama, Georgia, Tennessee, Kentucky, Virginia, Maryland, Ohio and Pennsylvania. By a computation of

* Maps and description of a large country newly discovered in the northern America, situated between New Mexico and the Frozen Sea, together with the course of the great river Meschasipi. By Lewis Hennessin. 1698.

† Statistics of Coal; a labored and valuable work. By Richard Cowling Taylor, recently published, to which we have been much indebted in preparing this paper.

Professor Mather, in his geological report upon the State of Ohio, which was made in 1838, it is estimated that the entire area of this coal field is about fifty thousand square miles, and it is moreover computed, from a credible source, that the beds in this field, capable of being worked, occupy an area of about forty thousand square miles. From another computation, also entitled to credit, we learn that the areas of bituminous coal strata, in the several States constituting the separate divisions, are as follows :—

AREA OF BITUMINOUS COAL STRATA THEREIN IN SQUARE MILES.

Alabama	3,400	Maryland	550
Georgia	150	Ohio	11,900
Tennessee	4,300	Pennsylvania	15,000
Kentucky	9,000		
Virginia	21,000	Total	65,300

There are, moreover, other tracts of bituminous coal in the Western States, which have been but partially explored, but which will doubtless be improved at some future time with great advantage. Among these are the vast tract embracing the central field of the plain of the Mississippi, entitled "The Illinois Coal Field," and which is included in the States of Kentucky, Indiana, Illinois and Iowa, the coal district of Michigan, and several minor basins, both in the east and west, which are not of sufficient extent to be worked with any considerable profit. The first "ark" load of bituminous coal was landed upon the Susquehanna as early as 1803, and it was a matter of some surprise to the people of the place, at that period, that an article with which they were unacquainted, should have made its appearance in the market. We shall be more fully disposed to appreciate the progress of enterprise connected with this species of coal, when we learn, from an authentic estimate, that the annual product of bituminous coal throughout the United States, amounts to about one million seven hundred and fifty thousand tons. This species, which is softer and more combustible than the anthracite, seldom finds its way to the eastern ports. Yet it is used extensively throughout the west, in various sorts of manufactures, blast furnaces, forges, rolling mills, and foundries. A considerable portion is, moreover, employed in and around the city of Pittsburgh, where it can be drawn down from the neighboring hills to the doors of the workshops with great facility, a place in which is embarked a capital of about twenty millions of dollars, and has communication through the Ohio River with almost every part of the Mississippi Valley. It has been our design merely to trace the outline of the bituminous coal field, without specifying the particular points which have been improved.

The region producing the anthracite coal, the species which is most commonly employed throughout the Eastern States, exhibits, however, the most prominent field of enterprise connected with the coal trade, and it may not be generally known that the main portion of this species of coal is included within the bounds of the State of Pennsylvania. The great value of the anthracite region is at present derived from the circumstance that the species of coal here produced is mainly used in the Eastern States for domestic purposes ; and its importance may be judged from the fact that about seventeen thousand persons are dependent upon this trade for their subsistence. We now come to the consideration of the particular tracts of territory constituting the anthracite coal region. This region is composed of three principal districts, lying in a central portion of the eastern part of the State, including the counties of Schuylkill, Dauphin, Lebanon, Carbon, Northumberland,

Columbia, and Luzerne; tracts which are watered by the Susquehanna, Schuylkill, and Lehigh Rivers, with their branches. Those three large coal regions constitute three divisions. 1st. The South Anthracite Region. 2d. The Middle Anthracite Region. 3d. The North Anthracite Region, or Wyoming Coal Field.

The South Anthracite Region, extending from its eastern point, on the Lehigh River, to its western terminus near the Susquehanna, the distance of about seventy-five miles, contains the districts of Lehigh, Tamaqua, Tuscarora, Schuylkill Valley, Pottsville, Minersville, Swartara, the Lykens Valley, and Dauphin. *The Middle Anthracite Region* contains the Shamokin, Mahanoy, Girardsville, and Quaquake coal districts, and also several small basins near the Lehigh River, such as the Beaver Meadow, Hazleton, Black Creek, Sandy Creek, and others of still less size. This is about fifty miles long, and four broad, at its widest point. *The North Anthracite Region* contains the Shickshinny, Wilkesbarre, Newport, Pittston, Lackawanna, and Carbondale coal districts. This region extends from the head waters of Lackawanna Creek, to its western point at Shickshinny, upon the north branch of the Susquehanna, a distance of sixty miles, but without containing so great a breadth as the other districts.

The original use of anthracite coal is of some interest, as indicating the progress of the coal trade. The portion which is found in the Valley of Wyoming, was known to exist during the first settlement of that part of the territory, and experiments were there first made for its use. As early as the year 1776, several "ark" loads were floated down the Susquehanna, from a point about one mile above Wilkesbarre. It had indeed been used, as we are informed, in 1768, by an ingenious blacksmith, and continued to be successfully employed by persons of the same trade, for a long period, throughout this Valley. During the year 1808, it was first used in a grate, in the same section of the country. The species termed bituminous, has been likewise employed for a long period in the State, it having been carried down the Susquehanna in "arks," and sold in small quantities at the towns along the river, for the forges of the blacksmiths. During the year 1785, a tract of land upon the bank of that river was taken up, and in 1803 an "ark" load of this coal was sent down the Susquehanna, from a point near the present town of Clearfield, to Columbia, a distance of two hundred and sixty miles. During the year 1813, a colliery was erected. A few years afterward, a quantity of coal was exported to Philadelphia, where it sold for about thirty-three cents a bushel, this being the first load of that material taken to the city from the Susquehanna.

The discovery of coal in the Lehigh district was soon after made, and about the beginning of the year 1792, "The Lehigh Coal Company" was formed, but without a charter of incorporation, while the individuals of which it was constituted, took up between eight and ten thousand acres of "unlocated" land, including the Mauch Chunk Mountains. A mine was now opened, but the difficulties of transportation were so great that it was soon relinquished, and continued in a neglected state, until the year 1807, when an "ark" carried to Philadelphia two or three hundred bushels, a portion of which was sold for the use of the steam-engine connected with the water works of that city. But it was found, upon trial, that it was more effective in extinguishing, than in producing, fire; and being discovered, as was supposed, entirely worthless, the remainder was broken up, and spread out instead of gravel, upon the walks of the surrounding garden. The

navigation of the Lehigh River had, meanwhile, become an object of importance. An act was accordingly passed for its improvement, as early as 1771, and other acts for the same object were passed during six successive years, down to 1816. Under the sanction of one of those acts, a company was formed, and, after expending about twenty thousand dollars in clearing out channels, the design of perfecting the navigation of the river was relinquished.

Meantime, "The Coal Mine Company" commenced the granting of leases to several individuals. The last was made for the term of ten years, with the privilege of cutting timber from their lands, for floating the coal to market, upon the condition that they should send to Philadelphia ten thousand bushels each year, for the benefit of the grantees. Several arks were accordingly laden, only three of which reached the city; and at the close of the war in 1815, the enterprise was abandoned. While the war was pending, certain individuals, who were employed in the manufacture of iron wire at the Falls of the Schuylkill, having understood that the Lehigh coal had been used with success in a rolling mill within the bounds of the State, procured, at the cost of a dollar a bushel, a cart load of it. A whole night was spent in endeavoring to kindle it, but without success, and the enterprise was relinquished in despair, until by chance it was discovered, on re-opening the building, that the door of the furnace was red-hot, in consequence of which several parcels of iron were heated and rolled, and the experiment proved successful. This company now continued the use of anthracite coal, which was brought down from Schuylkill county in wagons or flats, and also from Lehigh in "arks." The company to which we last alluded, having thus become convinced of the valuable properties of anthracite, soon disposed of their works on the Schuylkill, to the city of Philadelphia, and directed their attention to the mines of the Lehigh, with the view of improving them, and transporting their products to market.

This company, in January, 1818, conjointly with another individual, obtained the control of the lands of the "Lehigh Coal Mine Company." During the succeeding March, the Legislature granted to them the power of improving the navigation of the Lehigh, and vested in them, their heirs and assigns, the absolute and exclusive use of the waters of the river, not incompatible with the navigation, and the right to levy tolls upon boats, rafts, and other craft descending the river, and also upon ascending it, in case a slack water navigation should be made, upon certain conditions. In order to obtain funds for the purpose of carrying this act into effect, and also of conducting the mining operations advantageously, the company formed, with others, two associations, in July, 1818, the one being denominated "The Lehigh Navigation Company," and the other "The Lehigh Coal Company." During the succeeding month, the Navigation Company commenced the improvement of the Lehigh River, and, in 1820, coal was transported to Philadelphia by an artificial navigation, and delivered at the door of the purchasers, for the price of eight dollars and a half a ton.

During the same year, the two companies were amalgamated under the title of "The Lehigh Coal and Navigation Company," the Company itself being incorporated by an act which passed the Legislature on the 13th of February, 1832. Their capital stock was limited to one million of dollars, which was divided into shares of fifty dollars each; and they were empowered to commence a slack water navigation upon the Lehigh, within a year from the date of the act. It was through the agency of this company that

the work extending from Easton to Mauch Chunk, a distance of forty-six miles and three-quarters, was constructed, comprised of ten miles of pools, and thirty-six miles and three-quarters of canals, which was commenced in the summer of 1827, and completed so far as to authorize toll to be collected upon it in 1829, the whole at the cost of about one million five hundred and fifty-eight thousand dollars.

In the district within the vicinity of Pottsville, coal was long known to exist, and had been used in the blacksmith shops. About the year 1800, a portion was taken to the market of Philadelphia, but the merits of what was denominated "stone coal" were not appreciated, and the miner found but few purchasers. In 1810, however, a practical chemist, having made such an analysis of the coal of this region as to satisfy him of its value, erected a furnace between Philadelphia and Kensington, and obtained satisfactory evidence of its value. A few wagon loads were soon afterwards transported to the city, and after being opposed by prejudices which appeared almost unconquerable, those were at length overcome, and that mineral worked its way gradually into general use. During the year 1825, the first successful attempt was made to generate steam with anthracite coal, at the Phœnixville iron works.

The anthracite coal trade had now become firmly and prosperously established, and circumstances conspired to advance its progress. The forests in the vicinity of Philadelphia, as well as in that of many of the neighboring towns, had, as early as 1812, become somewhat diminished. Common wood, and every kind of lumber for building, were held at high prices. Turnpike roads were the only avenues of communication with the interior counties, and with the progress of trade, enterprise was now directed to the navigation of the Schuylkill. The Schuylkill Navigation was incorporated in 1814, being one hundred and eight miles in length, and was constructed at a cost of nearly three millions of dollars. The coal trade of this quarter continued to advance, and the manufacture of stoves, with grates appropriate to the use of anthracite, which was introduced about the year 1827, tended to increase the consumption of this fuel, and, by consequence, to advance the prosperity of the trade.

The particular mode in which the anthracite coal is mined, now deserves consideration, and it may be proper to direct our attention to the Lehigh district of the Schuylkill region, this region having been the first theater of mining operations in that quarter. The plan is, in many respects, peculiar, from the nature of the mines. The enterprise has, heretofore, been carried on by "The Lehigh Coal and Navigation Company," until recently, when the mines have been leased to individuals, who receive certain stipulated sums for every ton of coal which is raised. Nine miles west of the town of Mauch Chunk, is the well-known Summit Mines, which furnish a large proportion of the coal that is mined by "The Lehigh Coal and Navigation Company." The beds of coal at this point are of great depth, reaching sometimes as far as fifty-three feet. The peculiar position of the coal beds, lying, as it were, upon the surface, instead of being situated in the depths of the earth, requires that they should be improved from the summit, and in the open light of day, rather than by subterranean excavations. The upper surface of the earth, composed of rock, slate, and earth, varying in depth from three to fifteen feet, is removed, and the excavation is entered by roads cut around and through the coal, sometimes down to the lowest level. The mineral is there detached by the sledge-hammer, and sometimes blasting be-

comes necessary. Railroads lead from the mines, for the purpose of transporting the coal to the main road, and others upon which the refuse coal, rock, and rubbish, are carried away in cars, and discharged down the side of the mountain. There are, moreover, other mines in the vicinity, belonging to "The Lehigh Coal and Navigation Company," in which the mineral is raised at so much per ton, by contract, for the Company, and produce annually about seven hundred and fifty thousand tons for shipment.

The railway from Mauch Chunk to "The Great Mine," which was commenced on the 8th of January, 1827, merits a particular description, as exhibiting the particular mode in which the enterprise of mining is prosecuted. The road descends from the mine to the top of the "shute," or funnel, at the inclination of about one hundred feet per mile, the descent being accomplished through the aid of gravity, in about half an hour. A building containing the machinery, together with an engine of a hundred horse power, regulates the descent of the loaded cars. The most prominent part of this machinery is a large cylinder, revolving horizontally, and serving to wind the rope or iron band which is attached to the cars. They are rolled by hand, and by the aid of mules, upon a circular platform, which revolves horizontally upon a perpendicular axis, and brings the car upon a level with the inclined plane, upon which they are to be launched. The rapid progress of the descending train is checked by the train of ascending empty cars. Accidents have seldom happened in this descent, and their frequency has been prevented by recent improvements. Should a car, however, break loose, as soon as it reaches a certain spot, it is thrown out, overturned, and lodged upon a clay bank below, which is formed for the purpose. When the car arrives at the foot of the inclined plane, it pitches into a downward curve in the railway, and a projecting bar securing the lower end of the car, knocks it open, and slides the coal down a deep funnel, or "chute," into a canal boat. The coal is brought from the mines to the top of the hill in the same mode as has been described above, the loaded cars ascending, while those which are empty descend. This general plan of operation in the mining of coal, that we have described, will tend to show the mode in which the enterprise is conducted throughout the anthracite coal region, although it of course varies in different collieries, according to circumstances.

The Schuylkill District presents, moreover, an interesting theatre of the coal trade, although the mode of mining has been naturally improved since its commencement. When the enterprise was commenced, shafts were sunk to the depth of from twenty to thirty feet, and the coal was raised in large vessels by means of a common windlass. As soon as the water became troublesome, which was usually the case at this depth, another shaft was sunk, and the same process was renewed. Those shafts were, however, soon superseded by "drifts," or openings above "water level," with a surface sufficiently inclined to draw off the water. They were generally opened upon the hill-sides, at the heads of veins, and the coal was brought out in wheelbarrows. In the year 1827, subterranean railways were introduced into the mines, and drifts were the only mode of mining until the year 1834. The empty cars are now frequently drawn into the mines by mules, and come out laden with coal, to be deposited at the place of export. When a vein of coal is worked below "water level," or at a point below the adjacent river, or stream, a steam engine and pumps are requisite to raise the accumulated water of the mines; and, indeed, stationary steam engines are required, for the purpose of lifting the coal up the slope. Sometimes props of timber are

required, in narrow veins, to support the roofs of the mines, while in those of greater thickness, the coal must be excavated in chambers, with "pillars," or walls of this mineral left standing, in order to prevent accident.

Prior to the year 1813, the great part of the coal mined throughout the anthracite region, was sold to the blacksmiths of the region for the use of their shops. Nor did the circumstances of the period warrant its exportation. The country around the coal mines was a comparative wilderness, wild, mountainous, and destitute of good roads by which it could be exported to market. The sparse settlers of the region, removed from the ordinary track of business and population, obtained their subsistence in part by hunting. The ordinary mode of transporting the coal from the mines was by wagons, over the roads which we have described; nor did the product at that period demand a good price, since wood was abundant, and the value of the mineral had not been fully ascertained in the Atlantic ports. Besides, the navigation of the Schuylkill was imperfect, and, in consequence, the whole extent of the trade of the anthracite region, from the year 1818 to 1824, did not exceed forty thousand tons. But the construction of railways in this region, which was commenced in 1827, and their introduction into "drifts," by which loaded cars were dragged out of the mines by mules, as well as the manufacture of grates in stoves, which was commenced in the same year, tended to advance the coal trade in a new career of prosperity.

In consequence of the brightening prospects connected with the enterprises of the anthracite coal trade of Pennsylvania at this period, from the circumstances that we have described, the growth of the Schuylkill District was rapidly increased, and a spirit of speculation sprung up in the coal regions, similar to that which prevailed in the north-west regarding lands. Its principal theater was Pottsville, which, in 1829, became the most prominent field of those speculations. The imaginations of individuals, looking forward to prospective advantages, rather than existing facts, in numerous instances outran the sober deductions of common sense, and led them into those pecuniary hazards which left in their train nothing but disaster, and sometimes ruin. Coal lands were advanced to a fictitious price, far exceeding their actual value; cities were laid out, which had no actual existence, but upon the maps, and divided into lots, which were sold at one hundred fold their real worth, until finally the dream of unmeasured wealth was dispelled with the darkness, and morning broke, disclosing the light of day.

An enterprise of considerable importance was now projected, the direct consequence of which was to advance the progress of the coal trade. We mean the application of anthracite coal to the smelting of iron. As early as 1820, experiments had been made in Mauch Chunk, by "the Lehigh Coal Company," in using this material in blast furnaces. The successful trial of this experiment appears to have been made at the same time in Europe and in our own country; and in 1838, about one and a half tons of iron were produced with anthracite coal in a single day. In consequence of the success of this and other similar experiments, and especially after the tariff act of 1842, anthracite furnaces began rapidly to multiply, and have continued thus to increase down to a recent period, in almost every section of the State where coal and iron were produced.

The first bar of railroad iron was manufactured in the United States in 1845. Since that time, various establishments of the same kind have gone into operation. It is estimated that 45,000 tons of this species of iron can be produced annually in the State of Pennsylvania alone, and 100,000 tons

throughout the United States. There have been, moreover, forty anthracite furnaces erected in this State since 1839, and in blast in 1847, producing 121,800 tons of iron; and nineteen anthracite rolling mills, yielding 69,500 tons.

The number of those furnaces has continued rapidly to increase, until very lately, when the duties upon foreign iron have become so greatly reduced, that it is deemed impracticable for the manufacturers of iron in our own country to compete with those of Europe. This disadvantage is, moreover, increased by the great facilities which are presented for the import of iron in the present state of ocean navigation. We have, in fact, recently seen cargoes of iron landed upon the wharves of Philadelphia from the Liverpool packets. The cost of importing foreign iron, and the duty, is more than counterbalanced by the difference in the price of labor.

There is another circumstance, we are informed,* has borne strongly upon the manufacture of iron in our own country, and that is, the instability which of late years has characterized our legislation. Capitalists have been found unwilling to invest, under a system of policy which is liable to be undermined during every new administration. It is admitted, on all sides, that facilities exist for the manufacture of iron in our own country equal, to say the least, with those which are held out in any other part of the globe. Inexhaustible supplies of coal and iron ore exist in our hills, and the ores are equal to those of England and Wales. The following table shows the iron trade of Philadelphia during the years specified, from which we may judge of the amount of the trade down to the year 1846:—

	Pig iron and castings.		Wrought iron.	
	1847.	1846.	1847.	1846.
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*
By Chesape'ke and Delaware Canal	88,131,239	63,324,093	18,058,491	18,669,843
Delaware Canal	47,020,021	43,193,081	327,852	106,389
Schuylkill Canal	15,963,480	9,219,840	8,442,560	2,408,000
Reading Railroad	14,778,510	22,343,230	20,725,040	9,372,910
Columbia Railroad	9,146,500	2,549,600	21,506,500	9,008,100
Norristown Railroad	10,075,520	10,288,789	3,184,320	.....
Total	185,115,270	150,918,633	72,244,763	39,565,242
Equal to, in tons	82,640	67,392	32,252	17,681
	Nails and spikes.		Blooms.	
By Reading Railroad	8,743,480	7,251,670	1,537,330	2,459,060
Columbia Railroad	7,213,700	21,500	1,323,300	7,251,670
Norristown Railroad	.....	1,741,792	89,600	.....
Chesape'ke and Delaware Canal	1,634,877	.....	.....	.....
Schuylkill Canal	1,966,720	1,612,800	3,339,840	.....
Total	19,558,777	10,627,736	6,290,070	9,710,730
Equal to, in tons	8,731	6,278	2,808	4,335
" " kegs	195,587	101,217		

Previous to the year 1844, coal was broken entirely by hand, but during that year a machine, generally revolved by the agency of steam, was invented, whose design was to supersede that labor, and is capable of breaking a ton of coal a minute.†

* We would here remark that we are greatly indebted to "A general Geological, Historical, and Statistical view of the Anthracite Coal Districts of Pennsylvania." By ELI BOWEN, an associate editor of the Miners' Journal.

† In order to show the importance of the coal trade, it may be remarked that there are 167 steam-engines employed in pumping, hoisting, and breaking coal in the Schuylkill County Coal Region alone, with an aggregate power of 4,465 horses, and performing the labor of 44,650 men. A considerable portion of those engines are run day and night.

The ventilation of coal mines was found to be a subject of considerable difficulty, until the invention of the safety lamp by Sir Humphrey Davy, tended, in a great measure, to prevent the danger springing from subterranean explosions. It seems to be admitted that the moral condition of the mining population of our country, who are employed in the coal trade, is good, and, as a class, they enjoy health. They are principally from England and Wales, with a few Irish and Scotchmen. Each miner, in the subterranean darkness of the mines, carries a lamp hooked to his cap. They wear heavy coarse shoes, covered with tacks, and while pursuing their labors, their rude clothes become saturated with coal-dust, and are made damp by the moisture of the mines, the floors of which are commonly covered with coal, mud, and water. Their wages, since the year 1831, have generally averaged a dollar each day, and, as a class, they may be deemed comparatively prosperous, and much attached to their mode of life.

We subjoin the following table, showing the prices of coal in the principal cities, from 1838 to 1848:—

AVERAGE PRICES OF ANTHRACITE IN NEW YORK, BOSTON, AND PHILADELPHIA.

Years.	Philadelphia, wholesale, per ton of 2,240 lbs.	New York, retail, per ton of 2,000 lbs.	Boston, retail, per ton of 2,000 lbs.
1839	$5 50 to	$8 00 to	$9 00 to $10 00
1840	5 50 to	8 00 to	9 00 to 11 00
1841	5 00 to	7 75 to	8 00 to 9 00
1842	4 25 to	6 50 to	6 00 to 6 50
1843	3 50 to	5 75 to	6 00 to 6 50
1844	3 37 to	5 50 to	6 00 to 6 50
1845	3 50 to	5 75 to	6 00 to 7 00
1846	4 00 to	6 00 to	6 50 to 7 00
1847	3 85 to $4 00	5 50 to $6 00	6 50 to 7 00

The system of canals and railroads connected with the anthracite mines, is of some interest, as exhibiting the avenues through which these products are conveyed to market, and we accordingly subjoin the following table, exhibiting their number and extent:—

CANAL AND RAILROAD SYSTEM IN RELATION TO THE ANTHRACITE DISTRICTS OF PENNSYLVANIA.

Names of railroad and canals.	Canals. *Miles.*	Railroads. *Miles.*	Total cost.
Lehigh Navigation	87½		$4,455,000
Lehigh and Susquehanna Railroad		20	1,350,000
Mauch Chunk and Summit Railroads		36	831,684
Delaware Division of the Pennsylvania Canal	43		1,734,958
Beaver Meadow Railroad		26	360,000
Hazleton Railroad		10	120,000
Buck Mountain Railroad		4	40,000
Summit Railroal		2	20,000
Delaware and Hudson Canal—partly in New Jersey	108	16	3,250,000
Morris Coal Canal, in New Jersey	102		4,000,000
The Schuylkill Navigation	108		5,785,000
The Reading and Pottsville Railroad		98	11,590,000
Little Schuylkill and Tamaqua Railroad		20	500,000
Mine Hill and Schuylkill Haven, and extension to Swatara.		55	550,000
Danville and Pottsville, 44¼ miles unfinished		29½	680,000
Mount Carbon Railroad		7	155,000
" and Port Carbon Railroad		2½	120,000
Schuylkill Valley Railroad		14	300,000
Mill Creek Railroad		6	120,000
Railroads by individuals		70	180,000
Under-ground railroads		100	120,000
Lyken's Valley Railroad		16	200,000

CANAL AND RAILROAD SYSTEM—CONTINUED.

Name of railroads and canals.	Canals. *Miles.*	Railroads. *Miles.*	Total cost.
Wisconisco Canal	12		370,000
Swatara Railroad		4	20,000
North Branch Canal—division	73		1,491,894
" " extension	90		1,298,416
Wyoming Improvements, not ascertained			

There are many private railroads constructed since the above was drawn up. The whole may be estimated at more than forty millions of dollars.

The northern region of the anthracite coal field of Pennsylvania, embracing the districts of Lackawana and Wyoming, is one of picturesque beauty, which has been portrayed in the fictions of poetry, and painted in glowing colors upon the canvass. It is a region of mountains and valleys, of crags, precipices, rivers, forests, and waterfalls. The Susquehanna winds its way through fertile plains, and sweeps the bases of mountains, which, although in some parts barren, repose like blue clouds upon the distant horizon. It moreover abounds in most valuable beds of coal, which have been but partially developed, but which are situated favorably for the exportation of their products to convenient markets. The principal avenue for the exportation of coal from the Lackawana anthracite region in the northern coal field, is by a railroad running eighteen miles, and the Delaware and Hudson Canal, extending one hundred and eight miles, to Rondout, upon the Hudson River. A navigation of ninety-one miles upon this river, reaches from that point to the city of New York. Carbondale constitutes the principal working point in the Lackawana region, where there was but one solitary house in 1829, but which contained in 1840 a population of two thousand three hundred and ninety-eight persons, who were mainly employed by the company in the enterprise of the coal trade.

The valley of the Schuylkill now constitutes, however, the main theatre of the anthracite coal trade, and the works connected with the Schuylkill navigation are of great importance. The Reading Railroad constitutes the principal outlet of this part of the anthracite coal region, and it is composed of two continuous tracks, extending ninety-three miles, from Mount Carbon, near Pottsville, to Port Richmond, upon the Delaware River, with a diverging track to the principal business street of Philadelphia, for the supply of the city. Richmond, however, constitutes the principal terminus of the road, and here are erected the most extensive works of the company for the deposit and shipment of coal. This place is situated upon the borders of Philadelphia, and about three miles from the center of the city. The wharves and works of the company occupy about forty-nine acres, and, as we are informed, are probably the most extensive and commodious in the world, being accessible to vessels of 700 tons burthen. The shipping arrangements are composed of seventeen wharves, which extend into the river, and furnished with chutes, through which coal is slid into the vessel lying near the wharf from the bottom of the coal-car in which it left the mine. Capacious docks likewise extend in shore, between each pair of wharves, and ninety-seven vessels can be here laden at the same time. The elevation of the tracks above the flooring of the piers, affords sufficient room for stowing 195,000 tons of coal. We are enabled to judge the amount of transportation upon this railroad, when we learn that the running machinery employed upon it is constituted of seventy-one locomotive engines, three thousand and twenty iron cars, fifteen hundred and thirty-nine wooden coal cars, which sometimes

appear upon the railroad in trains of a hundred, four hundred and eighty-two cars for merchandise, and use of wood, and seventeen cars for passengers. There is here also an engine house erected, the front supported by clustered pillars of cast iron, capable of containing twenty engines and their tenders; and, adjoining to this, a spacious machine and work shops have been constructed. Having exhibited the prominent facts connected with the progress of the anthracite coal trade, we subjoin the following table, showing its advance in the amount sent from the several districts, from the commencement of the trade in 1820, down to the close of the year 1848:—

TABLE SHOWING THE QUANTITY OF COAL SENT TO MARKET ANNUALLY, FROM ITS COMMENCEMENT, IN 1820, TO 1848, INCLUSIVE—PREPARED FROM OFFICIAL DOCUMENTS.

Years.	Lehigh.	Schuylkill.	Lackaw'na.	Pine Grove.	Lyken's Valley.	Sh'mokin.	Wyom'g.	Total supply.	Inc'se & decrease.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1820	365	.....	.....	.....	.....	.....	.....	365	.....
1821	1,073	.....	.....	.....	.....	.....	.....	1,073	708
1822	2,440	.....	.....	.....	.....	.....	.....	2,440	1,167
1823	5,823	.....	.....	.....	.....	.....	.....	5,823	3,583
1824	9,541	.....	.....	.....	.....	.....	.....	9,541	3,718
1825	28,396	6,500	.....	.....	.....	.....	.....	34,896	25,355
1826	31,280	16,767	.....	.....	.....	.....	.....	48,047	13,151
1827	32,074	31,360	.....	.....	.....	.....	.....	63,434	15,387
1828	30,232	47,284	.....	.....	.....	.....	.....	77,516	14,082
1829	25,110	79,973	7,000	.....	.....	.....	.....	112,083	35,567
1830	41,750	89,984	42,700	.....	.....	.....	.....	174,734	62,351
1831	40,966	81,854	54,000	.....	.....	.....	.....	176,820	2,386
1832	75,000	209,271	84,500	.....	.....	.....	.....	368,771	191,951
1833	123,000	252,971	111,777	.....	.....	.....	.....	487,748	118,977
1834	106,244	226,692	43,700	.....	.....	.....	.....	376,636	*72,112
1835	131,250	339,508	98,845	5,500	.....	.....	.....	575,103	198,467
1836	146,522	432,045	104,500	9,978	5,439	.....	.....	698,484	123,381
1837	225,937	523,152	115,387	16,726	6,430	.....	.....	887,632	189,148
1838	214,211	433,875	76,321	16.665	6,005	4,104	.....	746,181	*141,451
1839	222,042	442,608	122,300	19,227	5,372	11,930	.....	823,479	77,298
1840	225,591	452,291	148,470	19,463	5,302	15,928	.....	867.045	43,566
1841	†142,807	585,542	192,270	15,306	6,176	22,154	.....	964,255	97,210
1842	271,913	541,504	205,253	31,437	181	10,098	47,346	1,107,732	143,477
1843	267,125	677,313	227,605	22,879	.....	9,870	57,740	1,262,532	154,800
1844	376,363	840,379	251,005	27,719	.....	13,087	114,906	1,623,459	360,927
1845	430,993	1,086,068	266,072	31,208	.....	10,135	178,401	2,002,877	379,418
1846	522,518	1,236,581	318,400	55,346	.....	12,646	188,003	2,333,494	330,617
1847	643,568	1,572,794	388,200	61,233	.....	14,994	289,898	2,970,597	637,103
1848	680,193	1,652,834	434,267	56,938	2,000	.....	237,271	‡3,063,503	92,466
Total..	5,505,327	11,859,150	3,392,572	384,625	36,905	124,856	1,113,565	22,417,000	.....

Of the coal brought from the Schuylkill Mines, the following quantities have been brought down on the railroad, the balance, of course, by the Schuylkill Canal:—

1841....tons	850.00	1844...tons	241,492.10	1847...tons	1,350,151.10
1842.....	49,902.00	1845.....	822,481.04	1848.....	1,216,232.03
1843.....	230,255.00	1846.....	1,233,141.10		

The total supplies sent from the Schuylkill region, on the railroad and canal, in 1848, have been:—

	By Railroad.	By Canal.	Total supply.
Port Carbon.....tons	372,509.05	257,706.19	.....
Pottsville.....	199,990.07	34,971.01	.....
Schuylkill Haven.....	501,560.10	125,409.13	.....
Port Clinton.....	142,172.01	18,514.09	.....
Total.....	1,216,232.03	436,602.02	1,652,834.05

Amount of coal left on the line of the canal above Philadelphia, in 1848...	70,525
" " " by the railroad, short of Richmond.....	178,610
Total tons.....	249,135

* Decrease. † Great freshet which injured the canal. ‡ Less Shamokin mines.

From the above statement, it will be seen that the total quantity of coal sent to market from the commencement of the trade, has been 22,417,000 tons. Of this quantity the Schuylkill region has furnished 11,859,150 tons; the Lehigh, 5,050,327 tons; the Lackawana, 3,392,572 tons; the Wyoming, 1,113,565 tons; the Pine Grove, 384,625 tons; the Shamokin, (less 1848,) 124,856 tons; the Lyken's Valley, 36,905 tons.

The importation of foreign coal into the United States has been, moreover, considerable. The duty, within the last two years, has been one dollar and seventy-five cents a ton, and it has been customary, quite lately, since the trade in breadstuffs between our own country and Europe has been increased, to substitute coal as ballast, upon their route home. Subjoined is a table, showing the importations of foreign coal into the United States in tons, of twenty-eight bushels each, from the 30th of June, 1821, to the same period in 1847, which has been obtained from public documents in the city of Washington:—

The following table shows the imports of foreign coal into the United States annually, from 1821, to the 1st July, 1848. The duty on foreign coal, under the present tariff, is 30 to 45 cents per ton, on board:—

1821.....tons	22,122	1835.....tons	49 969
1822.....	34,523	1836.....	108,432
1823.....	30,433	1837.....	153,450
1824.....	7,228	1838.....	129,083
1825.....	25,645	1839.....	181,551
1826.....	35,665	1840.....	162,867
1827.....	40,257	1841.....	155,394
1828.....	32,302	1842.....	141,526
1829.....	45,393	1843.....	41,163
1830.....	58,136	1844.....	87,073
1831.....	36,508	1845.....	85,771
1832.....	72,978	1846*.....	156,855
1833.....	92,432	1847†.....	148,021
1834.....	71,626	1848.....	196,251

In July, 1789, a law was passed laying a duty of 2 cents per bushel on imported coal. In 1790, the duty was increased to 3 cents. In 1792, the duty was increased to 4½ cents; and in 1794, to 5 cents per bushel. This duty was continued until 1816, when it was changed to 5 cents per heaped bushel. In 1824, the duty was increased to $1 50 per ton. In 1832, the duty was raised to $1 75 per ton, which was continued until the present tariff, in 1846, reduced it to from 30 to 45 cents per ton.

The coal trade for 1849 will show a considerable increase over that of 1848. A satisfactory arrangement has been entered into between the railroad company and the Schuylkill Canal, in reference to the charges for toll on coal, which will prove advantageous to all those who have made investments in the stock of these companies.

It has been our design to exhibit the prominent facts connected with the enterprise which is employed in the coal trade of the United States. The mines of coal and iron have been one of the principal sources of wealth and power of Great Britain—a power which now girdles the globe, and unfurls its red banner upon the waves of every sea. Of the present extent, and growing importance of the trade, we are enabled to judge, as well from the actual returns, as from the vast amount which is consumed in the eastern cities for domestic purposes, and in the numerous boats which ply upon the waters of the country. It is supposed that our twenty millions of people

consume annually about five millions of tons of coal. There is now scarcely a depot of business that does not contain deposits of this mineral, which are employed either for manufacturing purposes, or in the carrying trade. There will, moreover, doubtless be an increased consumption, both of the anthracite and bituminous species, in the numerous iron works which exist in various parts of the land, in the enterprises of ocean steam navigation, as well as in the general progress of settlement and trade. This consumption will be, doubtless, augmented both at the East and West, in proportion as the value of this mineral is known, and the forests become exhausted.

Art. III.—THE HELIX: CONSIDERED AS A PROPELLER OF STEAM VESSELS.

FUNDAMENTAL QUESTION OF OCEAN STEAM NAVIGATION—REMARKS ON THE SCREW PROPELLERS—THEORY OF THE HELIX—CASE OF A HELIX EMPLOYED AS A PROPELLER—PRACTICAL REMARKS—DIFFERENCE BETWEEN A HELIX AND A PADDLE-WHEEL PROPELLER—CONCLUSION.

Ocean steam navigation requires vessels equally tremendous by their tonnage, steam-power, consumption of fuel, and, above all, by their costs. Altogether, these vessels, besides their own enormous weight, and stock of coal, transport nothing, being almost unfit for carrying anything else but the mere trifles of a mail and passengers' packet.

The whole destiny of this new mode of maritime intercourse is, then, still depending upon the means by which more suitable proportions might be introduced between the size and expenses required on one hand by, and the services and receipts expected on the other from, a steamship.

The huge and entirely disproportionate vessels actually in use, are imposed by a necessity which experience has rendered more irresistible, from day to day. The laws of this necessity must show the remedy to an increase which most probably has not yet, even in the largest ocean steamers, attained to its natural and dreadful bounds.

The matter will continually call attention to the common law of motion for a vertical plane, advancing by the line of its perpendicular axis, through an indefinite mass of water, which law, one second being the unit of time, A the area, V the speed, and $\frac{V2}{64,2882}$ the resistance of the medium, gives $\frac{A \times V3}{64,2882}$ for the quantity of motion of the plane.

FUNDAMENTAL QUESTION OF OCEAN STEAM NAVIGATION.

Long sea voyages, which are to be performed by means of steam-vessels, present a question, which arises seldom or never with steam navigation applied only to short coasting travels, rivers, lakes, or inland waters in general.

Each steam vessel must carry on board a certain provision of fuel. If this provision has to be large enough for providing, during a certain number of days, to the consumption of the steam-engine, it rises, naturally, to an amount which may require that the tonnage necessary for such a stock of fuel, the engines and their boilers shall be first taken into consideration. The whole tonnage of the vessel having to be equal at least to this, and to that of the stores for the crew and passengers. Hence arises the following fundamental question:—

What is the minimum of tonnage required in a steamship, so that the

vessel might be able either to perform a voyage of a certain length of route, within a certain space of time, or to sail upon the high sea at a given rate of speed, during a given number of days?

The vertical area of the immerged part of the midship section being represented by A, the ratio between the resistance of this plane, and the resistance of the vessel, by 22,5, its most approximate value, the speed of the vessel in the number of feet per second by V, the waste of steam power by the factor f, at last the unit of horse-power reduced to one second of time, and into cubic feet of water instead of pounds, by 8,8, and $\frac{A \times V3 \times f}{22,5 \times 64,2882 \times 8,8}$ or $\frac{A \times V3 \times f}{12729}$ will be the expression of the horse-power necessary for a steam vessel.

Reducing, also, the weight of coal consumed per day for one horse-power, to the weight of a cubic foot of water, or making it equal to 3; whilst d would express the number of days the vessel has to keep the open sea, and $\frac{A \times V3 \times f \times 3 \times d}{12729}$ would be the stock of coal required for a steamship.

The tonnage of a vessel depends upon the volume of water displaced by the immerged part of her bottom. We shall come very near the truth by making this part of a vessel equal to the cube of the square root of A, the vertical area of the immerged midship section, multiplied by 6, being somewhat less than the common ratio of length and beam in steam vessels. Hence $^2\sqrt{A^3} \times 6$ would represent the displacement of water of such a ship.

Counting, now, the weight of the body of the ship, engines, boilers, stores, and of some freight as amounting to three times the weight of the stock of coal, and four times this stock will be equal to the displacement of water of the vessel. Therefore, $\frac{A \times V3 \times f \times 3 \times d}{12729} \times 4 = {}^2\sqrt{A^3} \times 6$, or after reduction $\frac{V3 \times f \times d}{6364,5} = {}^2\sqrt{A}$, from which follows $\left(\frac{V3 \times f \times d}{6364,5}\right)^3 6$ as the number of cubic feet representing the minimum of tonnage, or the volume of immerged bottom, which a steam vessel must have, at least so that she could be able to carry on board the steam-engine and stock of coal, which would propel her with a speed V, during a certain number d of days.

Speed and regularity, in the departures and arrivals, are the ends aimed at by a steamship. On account of the nature of the obstacles which the vessel has to overcome, the second is only attainable by means of the first. A certain rate of high speed is thus an unavoidable requirement in ocean steam navigation. Supposing, then, for a moment, that no waste of power is taking place, or by reducing f to 1, and giving its proper value to V, the speed, it will appear at once from this formula, that the size of a minimum steamer corresponds still to the capacity of an ordinary merchantman, even if the number of days d during which the vessel shall keep the open sea should be only a moderate one.

But the propulsion of each steam vessel is accompanied with a certain waste of power. The tonnage of a minimum steamship is liable to all variations, which may result from more or less skill in avoiding the loss of steam power.

According to the equation $\frac{V3 \times f \times d}{6364,5} = {}^2\sqrt{A}$, the variations of the tonnage are evidently like the cube of $^2\sqrt{A}$, the second term; hence the tonnage increases and decreases, like the cube of the first term. But all quantities of this first term being, with the exception of the factor of waste of power f, the same for any kind of steam vessel whatever, it follows that the tonnage of

a minimum steam vessel decreases and increases like the cube of the waste of steam power.

Thus the least waste of power, a loss which, in any other case, might be completely neglected, acquires, on the contrary, a new and unexpected importance in ocean steam navigation. Indeed, for the simple reason that this law of an increase and decrease in the ratio of the cube, must be applied to vessels which, by themselves, and independently of all waste of power, must be of a common size; it is the circumstance of this waste alone, (see the conclusion, for an instance of it,) which raises ocean steamers to that gigantic bulk and steam power, of which the stupendous proportions and expenses have no relation at all with the purposes for which these vessels can ever be employed in trade and commerce. Not only a common and always rational economy, but the very equilibrium of ends and means, are then for ocean steam navigation depending from a *reduction of the waste of power.*

A steamship consists of three principal parts: the vessel herself, the engine, with boilers, and other dependencies, and the propelling apparatus. As nothing can prevent from giving to the vessel all the sharpness of good sailing qualities, and the steam-engine having arrived at a perfection which excludes for the present all probabilities of any striking improvement, it is only the third or last part of a steamship which invites to farther examinations.

The propeller which hitherto has been, so to say, alone in use, which has outlived all the other ones, which have been either proposed or brought to a trial, is the common paddle-wheel. By its very nature, this propeller is subject to an unavoidable waste of power, which, however, a skillful practice has already reduced to such a degree, that from this side also far greater improvements are not very probable. Indeed, the minimum tonnage of a transatlantic paddle-wheel steamer, for instance, which would give some satisfactory results of speed and regularity, is about that (see the conclusion) of those vessels recently built in England, which are in tonnage and steam power precisely the largest of all steamships which have ever been set afloat. It might be said the very improvements of ocean steam navigation go to show it impracticable as a common, useful, and profitable business. Certainly, until maritime trade and foreign intercouse have, in their natural progress, grown up to the proportions of an ocean steamer, these vessels will not come down to the real wants of trade and commerce, without the patronage of some monopoly in the form of mail contracts or other government subsidies, as long as they have to be propelled by a paddle-wheel.

Amongst the several propellers proposed in competition with the paddle-wheel, that of the so-called screw propellers, awakened, at a time past, the most lively hopes. And, as there could have been some instinctive truth in these expectations of the public mind, the foregoing considerations may serve as an introduction, and, if necessary, as an excuse, to the following essay of a new inquiry into the nature of the propelling apparatus of these vessels, and of another comparison between this and the paddle-wheel propeller.

REMARKS ON THE SCREW PROPELLERS.

Notwithstanding the great and numerous defects of the screw propellers, the ingenuity of their mode of propulsion will forever command admiration and surprise. Yet, altogether, it may be asserted, without presuming too much, that the nature of the principle, or the true element of this ingenious contrivance seems to have been entirely lost sight of in each of these vessels. The very name which has prevailed for them gives of this a most conclusive proof.

Indeed, a screw could never be made use of for transmitting to a steam vessel her sailing motion. The principle from which this useful tool itself derives its origin, the line and surface, called helix in mathematics, could alone undergo a new practical application for such a purpose. To apply the term screw, to a helix, is, then, to take for the principle itself a simple consequence of the principle, and constitutes precisely that confusion about nature of things, which has produced screw propellers in such a variety, as if there were not an element common to all, and including the screw.

THEORY OF THE HELIX.

Fig. 1.

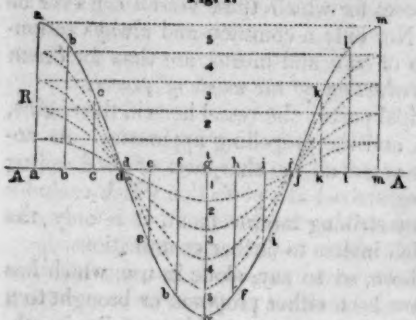
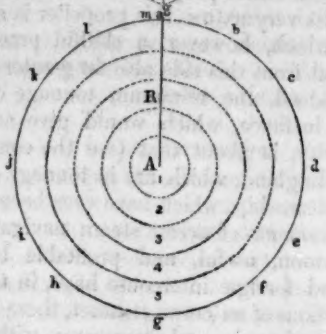


Fig. 2.



Suppose a line R, joining at right angles a horizontal axis, A A, (fig. 1,) and moving around with the axis, then R will describe (fig. 2) a circle. If, whilst describing a circle, by a circular and uniform motion, R progresses at the same time, by a motion uniform also, along the axis from *a* to *b*, *c*, *d*, &c., then the surface of the circle will be protracted along and around the axis as far as *m*, when R has performed a complete revolution.

The surface *aa*, *bb*, *cc* ..... *mm* (fig. 1) thus described is a helix, and R the radius, AA the axis, *a m* the length or pitch, the area *a m a m*, (fig. 1) the parallelogram, and that *a*, *b*, *c* ..... *m* (fig. 2) the circle of the helix.

A surface of this kind, infinitely strong, as lines and surfaces are generally supposed in mathematics to be infinitely thin, and submerged into a resisting medium, water, for instance, can present either of the following cases of motion :—1st. On account of any cause whatever, it may move through the fluid with that same twofold motion of the radius R, by which it has been generated; that is to say, progressing in the line of the axis at the rate of one length of pitch for each revolution around the axis. 2d. It may be impelled by a single linear impulse parallel to the axis; or 3d. By a single circular impulse around and perpendicular to the axis.

In the first case, each radius of the helix describes, in its turn, like the radius R above, a helix identically the same with that of which the radius is a part. Hence all the radii move along and in the same trajectorial curved plane, which is that of their common helix. Therefore, this plane, or the surface of the helix, progresses in this case through the fluid, encountering the water and its resistance only, by the line of its radius. In the second case, on the contrary, the helix meets the medium, and its resistance by the area of the circle, and in the third by that of the parallelogram. The helix encountering no resistance by the first case, this one may be called the case of *motion of least resistance.*

In each of the other two cases, the helix exerts upon the water a pressure

proportional to the areas by which its surface encounters the fluid. But any pressure applied to any part of a liquid mass is communicated on all sides through the whole mass, and the reaction of the fluid equal to the pressure, exerts itself in the direction which opposes the least resistance to the pressure. Therefore, the helix would begin to turn around the axis by the second, or to progress in the line of the axis by the third, and thus proceed through the medium by its motion of least resistance, in each case.

Any case of such a conjoint circular and linear motion, which should not be a case of motion of least resistance, would suppose the radii describing a helix different from that of which they are a part, and moving altogether each separately along and in its own trajectorial plane through the medium. Thus the helix would then, in its trajectorial motion, encounter the resistance of the fluid by a plane instead of a line, and exert, by its progress, a new pressure, proportional to this plane. But the reaction of this pressure being never lost, and altogether proportional to the plane from which it arises, which plane is itself proportional to the cause of this departure from the case of motion of least resistance, this reaction would necessarily restore at once this case of motion for the helix.

Hence it follows, that any impulse whatever imparted to a helix immerged into a resisting medium, will produce a case of motion of least resistance, and that any impulse or impulses whatever, will always either consist in, or by this motion be reduced to, a quantity of motion imparted in a direction either circular or linear, or in both directions altogether.

By the motion of least resistance, each point of the helix moves in a trajectory concentric to the axis; in consequence of which the point advances through a space p equal to the pitch in a direction parallel, whilst it describes a circumference c given by its distance from, and in a direction perpendicular to, the same axis. Thus p is the linear, c the circular, and both being constantly at right angles, $^2\sqrt{p^2 + c^2}$, the trajectorial speed of least resistance for each point of a helix.

Parts concentric to the axis, and of an equal hight, (1, 2, 3 .... fig. 1 and 2,) become equal to each other, and proportional to p, the pitch for the parallelogram; they increase, on the contrary, like c, the circumference given by their distance from the axis, for the circle of the helix. Hence, and c being their speed perpendicular to the parallelogram, and p that perpendicular to the circle, $\frac{c^3 \times p}{64{,}2882}$ and $\frac{p^3 \times c}{64{,}2882}$ or, both quantities being reductible by $\frac{p \times c}{64{,}2882}$, c^2 and p^2 are the circular and the linear quantity of motion of least resistance for each point of a helix.

The values of c and c^2 being variable, whilst those of p and p^2 are constant; a glance on each side shows that there is for each radius a point, and for the helix a line; where these quantities give the equations $c=p$, and $c^2=p^2$, which, for this reason, may be called the point and the line of equation.

Representing by m the impulse which has produced a case of motion of least resistance, and we have $c^2=m$ with p^2 for the reaction of the medium, in the case of a circular, and $p^2=m$ with c^2 for the reaction, in the case of a linear quantity of motion.

The relations existing between these quantities denote a peculiar state of things. In accordance with the law of a reaction equal to the pressure, the reaction of the medium is equal to m, the pressure exerted by the imparted power, for each point of the helix. By the motion of least resistance, on the contrary, this takes place only upon the line of equation, and on each side of this line, the pressure and its reaction are at variance with each other,

in the ratio of c^2 and p^2, of which the one or the other represents m, the imparted power. Hence, the forces acting upon any point without the line of equation, for the production of the motion of least resistance are not the same as those acting upon the point in accordance with the law, of which this motion itself is but a consequence. The motion of least resistance is, then, the result of a system of forces by which the points of the helix have a permanent tendency to depart from this motion.

The tangent of the trajectory given by the law of a reaction equal to the pressure, depending upon quantities equal to each other, is at a constant angle with the axis of the helix; and thus at a variable one with the tangent of the trajectory of least resistance, which is given by quantities unequal to each other. In the direction of the first, the resultant of the imparted power m, and of a reaction equal to m, exerts, then, another new pressure upon the medium, which pressure is like d, the difference between c^2 and p^2, or between the reaction m, and the reaction exerted for the motion of least resistance. Now as the reaction of a liquid mass manifests itself in that direction which opposes the least resistance to its cause, or to the pressure, the reaction of this new pressure d, works necessarily in that way which produces the motion of least resistance for the helix, by which all pressure is exerted. The reaction of d becomes, therefore, opposed to, or coincident with, that of the imparted power m, as it may be required by the case peculiar to each point of the helix; affecting thus the reaction m, with a negative quantity $-d$, whenever m is greater, and with a positive quantity $+d$, whenever it is smaller than the reaction of the medium necessary for the motion of least resistance.

A helix, progressing through a resisting fluid, without encountering any resistance, and being at the same time impelled by a reaction of the medium, which is equal to the pressure of a quantity of motion c^2 or p^2, evolved either by the parallelogram or by the circle of the helix, it follows that a submerged surface of this kind may transmit, in its progress through the water, for any intended purpose, any quantity of power imparted to it, with the modifications which this power undergoes, by producing a case of motion of least resistance.

Such would be the case of a helix, propelling a steam vessel. In which case, the motion of least resistance being generated by a circular impulse, perpendicular to the axis, c^2 becomes the imparted power, and p^2 the reaction of the medium, which produces in a linear direction, parallel to the axis, the propelling effect.

CASE OF A HELIX EMPLOYED AS A PROPELLING APPARATUS.

Considering, then, this case of a submerged helix, and at once it will appear, on one hand, that, whatever might be the amount of a circular impulse, the quantity of motion transmitted in the line of the axis, could never be more than the reaction of the medium required by the case of motion of least resistance corresponding to the imparted impulse. Indeed, whenever the reaction of the imparted power is greater than that of the motion of least resistance, it becomes affected with a negative quantity equal to the difference between both. Hence, and for the present case, the quantity of motion evolved by the points above the line of equation, which have c^2 greater than p^2, is transmitted in the line of the axis by undergoing a reduction of $c^2 - p^2$, or from c^2 to $c^2 - c^2 + p^2 = p^2$ the reaction necessary for the motion of least resistance.

On another hand, and reciprocally, that whatever might be the reaction of the medium exerted for this motion, the amount of power transmitted in the line of the axis, could also never be more than the quantity of motion imparted and evolved around the axis. Hence, the positive quantity $p^2 - c^2$ which for the points below the line of equation, having c^2 less than p^2, raises the reaction equal to c^2 the imparted power from c^2 to $c^2 + p^2 - c^2 = p^2$, can never consist in an addition to the quantity of motion transmitted in a linear direction. But, as an inclined plane lessens the weight of, and lengthens the space run through, by a falling body, thus the reaction of the effort $p^2 - c^2$ to fly off from the trajectory of least resistance, decomposes the imparted circular impulse c^2 into the ratio of force and velocity given by the linear speed p, from which speed follows p^2 as the reaction exerted for the motion of least resistance.

Therefore, any quantity of motion imparted around the axis, will be transmitted to a steamship in the line of the axis, without any loss of steam power, but decomposed in another ratio of velocity and pressure, by a helix which has been described with a radius cut off at the point of equation, and which is moving in a case of motion of least resistance.

PRACTICAL REMARKS.

This solution answers to the first part of the great problem: how to introduce more suitable proportions between the size and expenses of, and the services and receipts expected from, a steam vessel. And although the intention of the author is not to enter here upon the second part, or upon any description of the practical methods, which he could have to propose for building such a propeller of that size, strength, and geometrical accuracy, which would be essential and peculiar to it, the matter suggests some other remarks of a practical nature.

The length of radius, that of pitch, the linear speed of least resistance, and the transmissible quantity of motion, are correlative quantities in a helix propeller. A short inquiry would then render apparent, that a helix would always form a propelling apparatus of a pretty large size and surface, and that the ordinary speed of the steam-engine would be rather too high for a slow sailing, whilst it would be sufficient with any size of tonnage and rate of speed for a fast-sailing helix steamship.

Thus a complete saving of waste of steam power, a rowing surface of a large area, a high speed, and a steam-engine working in its ordinary and most economical conditions, would be the preëminent features of a well proportioned helix steamer. These features are entirely different from, and almost the reverse of, those of the screw propellers. And such are indeed the prospects for ocean steam navigation, opened by the principles from which this outline has been drawn, that although these principles bear their truth within themselves, one would still place less reliance upon them, if they were not altogether a consequence of, and key to, the practical results and infinitely various defectuosities of the screw propellers.

DIFFERENCE BETWEEN A HELIX AND A PADDLE-WHEEL PROPELLER.

The curved surface of a helix can be made use of as a propeller without generating any waste of power. The plane which enters into the contrivance called a paddle-wheel, on the contrary, can never be employed for such a purpose, without wasting a certain amount of power.

It is a well-known fact, that, independently from these circumstances which

attend each practical combination of mechanics, a paddle-wheel propeller is, by a consequence of its own nature, subject to a waste of power in the ratio of the linear speed of the vessel, to the circular speed of the paddles, or the propelling plane.

The ultimate limit of this ratio depends upon the segment of the circle of the wheel which is dipped into the water. And a new waste of power arises from the changes and variations undergone by the segment of immersion, during a long voyage, and upon a surface of water like that of the ocean.

The nature of such causes relieves us from the arduous task of penetrating farther into the labyrinth of the theory of a paddle-wheel steamship; since the amount of waste of power of such a vessel, could in every case be only ascertained with some certitude from the experimental results of ocean steam navigation. This amount being affected by a quantity which is as variable as the oscillations of the sea, from a gentle swell, furling a perfect level, up to the highest and most whimsical waves of the tempest, the number of it can be but an average, being altogether at variance for the same vessel in each different voyage. Taking, then, the instances of the most favorable sailing of vessels, which may be considered as the most perfect among merchantmen steamers, and it will be found that 1 : 1,45 would still be the waste of power for staeamship propelled by a paddle-wheel.

Being deduced from entire voyages, the number of the waste of power includes all these minor losses of each combination of existing forces. And as the least waste is of great importance in ocean steam navigation, these losses cannot be neglected for a helix steamer. For a vessel of this kind, they could almost be ascertained in advance; consisting chiefly in the friction taking place on the surface upon which the shaft of the helix exerts the propelling pressure, and in the stuffing box through which the same enters into the vessel, and in the resistance encountered by the vertical edges of the helix, and by the rudder-rake of the ship, partly insulated from the body of the vessel, in their motion through the water. The preference may, however, be given also to more experimental methods. Thus, and taking the facts from a screw propeller sailing between the old and new continent, 1 : 1,07 will be found as the ratio of these losses for a helix steamer.

CONCLUSION.

Let now the speed of a steam vessel be set down at the rate of 21,2 feet per second, or at 12,5 marine miles per hour, making 300 per day, and the length of voyage at 12 days, giving 3,600 marine miles for the length of route; or full 400 miles more than the distance between New York and the principal Atlantic ports of Europe. By introducing this speed and number of days into the formula $\frac{V3\ f\ d}{6364,5} = 2\sqrt{A}$, and making f=1,45 for a paddle wheel, f=1,07 for a helix steam vessel, it will appear that the performance of such a voyage requires, at least, a paddle-wheel steamer of a tonnage of 106,080 cubic feet, or 2,960 tons measured by the displacement of water, and 736 horse steam power, or a helix steamer of a tonnage of 41,960 cubic feet, or 1,170 tons, measured in the same manner, and 293 horse steam power.

Such numbers would not require any farther explanation, if, notwithstanding the difference in tonnage and steam power, the sailing qualities of both vessels should yet be the same.

But this could never be the fact. The waste of power of a paddle-wheel

steamer is a variable quantity, depending upon the state of the surface of the sea. Hence, 1,45 being the waste of only the most favorable cases of sailing, the average speed of the vessel must necessarily be below the designed speed of 1,25 marine miles per hour, for which the proportions of the steamship have been laid out. A paddle-wheel steamer of 2,960 tons, and 736 horse steam power is, then, still too small for ever attaining 1,25 miles per hour during a voyage of 3,200 miles, as a mean for an entire voyage; otherwise, as by very few exceptions, and by a fortunate concourse of the most favorable circumstances. Such are indeed pretty near the facts of these few paddle-wheel steamers, which, by their performances and proportions, approach the nearest to the speed taken for our point of comparison, and to the tonnage and steam power, which have been found indispensable for a vessel of this kind sailing with such a speed.

The waste of power of a helix steamer being on the contrary a constant quantity depending very little, if ever, for anything at all, from the state of the surface of the sea, the average speed of the vessel would almost constantly be the same as her designed speed. And far from attaining the latter only by exception, the departure from it could only take place by a concourse of circumstances entirely exceptional for her completely submerged propelling apparatus.

As a steamship advances in her voyage, the resistance of the vessel decreases, by her rising out of the water, in consequence of the consumption of the stock of fuel. A helix steamer may have the whole benefit of this, by saving a corresponding quantity of steam power, and thus of coal. A paddle-wheel steamer, on the contrary, gains nothing, or very little, from the decreasing resistance of the vessel; for in this case, the area of the segment of immersion decreases in a greater ratio than the area of the immerged midship section, and as the propelling pressure is proportional to the first, the propeller must make up by an increase of circular speed the reduction of pressure, if the ship shall continue at the same rate of sailing; wasting, thus, by an increase of the ratio between the circular and linear speed, the best part of the power saved by a decrease of the resistance of the vessel.

Hence, towards the end of the voyage, when the approach of land produces again, to their fullest extent, the obstacles of contrary winds, tides, and currents, a helix steamer would have more steam power in store, or, what is the same, a larger remainder of the stock of coal, than a paddle-wheel steamer, with which to make head against these obstacles. Thus, the first would then not sail simply at a higher and more equal rate of speed during the voyage, but altogether enter with a greater precision than the second, into the port of her destination.

Now, as the same number of passengers, the same mail matters, and the same quantity of freight worth the shipping of an ocean steamer, which, in the present state of commercial intercourse, are transported by paddle-wheel steamships, could be as well accommodated and carried on board of vessels of much less tonnage and steam power, this final conclusion may at least be drawn from the researches above, that the receipts of the most stupendous existing steamers could be reaped; and altogether all the services of these vessels be performed with more dispatch and greater regularity, at the expense of building and keeping afloat helix steamships of 300 horse steam power, and 1,200 tons displacement of water.

Art. IV.—COMMERCE AND RESOUCES OF CANADA.

PROGRESS OF CANADA—LANDS OF THE PROVINCE—PROGRESS OF POPULATION—RELIGIOUS CENSUS—AGRICULTURAL AND OTHER PROPERTY—MANUFACTURES—SHIPPING—REVENUE—PUBLIC DEBT—EXPORTS AND IMPORTS—ARTICLES OF CONSUMPTION, ETC.

Most of our readers are aware that the attainment of a correct account of the material progress of the country has been long a subject of solicitude with enlightened Canadians. This has not been effected hitherto, in a manner to afford very ample or reliable details; nor is this to be wondered at, since in the older countries of Europe the great advantages of an accurate census have been, up to a recent period, but feebly appreciated. In the United States, perhaps, this information has been more carefully collected than in any other country. Upper Canada, too, has paid considerable attention to the business of numbering the people; and it is probable we should have had, by this time, a satisfactory enumeration of the resources of the eastern part of the Province, but for the rebellion of 1837–8. Causes of an analagous character, have, since the union, retarded the work of the census; but the subject has never been lost sight of, and one of the papers laid before Parliament during the present session, is the first fruit of the renewed effort made in this direction.

This paper is the appendix to the first report of the Board of Registration and Statistics. It is creditable alike to the Board, consisting of the Hon. Messrs. Hincks, Viger, and Leslie, and to their Secretary, Mr. W. C. Crofton, on whom no doubt the chief labor of the work must have fallen. The report comprises a number of tables, illustrating almost every subject of which figures can be the exponents, and affording a very favorable view of our increase in all the elements of material prosperity. Many of these tables extend to details, relating to localities and other particulars, which are highly important for some purposes, but are unnecessary to the appreciation of the general condition of the province. Our design is to reduce this mass of information to a more popular form, so as to render it available to those who may be interested in the results, but do not care to wade through the calculations.

Lands. The lands of the Province, being the chief source of its prosperity, as well as the chief inducement to settlers, we shall begin with them. The total number of surveyed acres in Lower Canada, according to Bouchette's last survey, was 18,871,040; but the return of lands disposed of is made with reference to a previous survey of 17,685,942 acres, and is dated in 1845. Of this quantity of land, 2,377,733 acres have been set apart for Clergy Reserves. The Jesuits' Estates, now employed in promoting education in the United Province, and other lands disposed of for charitable purposes, amount to 3,424,213 acres; and the grants *en seigneurie*, and free and common soccage to 11,343,629 acres. The surveyed lands, therefore, four years ago, stood thus:—

The survey was.....acres		17,685,942
Disposed of for public purposes.....	3,424,213	
Grants to individuals, &c.....	11,343,629	
		14,767,842
So that there remained.....		3,928,100

From Canada West the return is as follows for 1848:—

The whole survey was.....acres		15,902,006
Clergy reserves.....	2,142,145	
Grants.....	12,242,838	
		14,384,983
So that there remained		1,597,123

If we take the entire Province, therefore, and add the difference between the survey of 1845, and the latter one of Bouchette, amounting to 1,185,098 acres, we have 6,710,322 acres for the quantity of unsurveyed land still in the hands of the government, less the sales in Canada East since 1845, which probably amount to 500,000 acres=6,210,322 acres. During the present session, the Provincial Parliament has set apart a specific quantity of 100,000 acres for the endowment of Common Schools, with the further provision that the money received for all future sales of crown lands shall be applied to the same purpose, until a school fund of £1,000,000 shall have been formed.

Between the years 1836 and 1847, both inclusive, 933,229 acres of land were disposed of by the crown, in Canada East, by sale or gift, and 2,145,502 acres in Canada West. These figures, however, furnish little indication of the actual amount of settlement in either section, as they include large grants or sales to individuals far beyond the capacity of the granters to occupy or cultivate; and, on the other hand, do not include the sales of wild land made by individuals to settlers. The average price of public lands in Canada West, is given for several years, down to 1840, in which year the prices are reported at 11s. 2d. per acre for crown lands; 12s. 8d. for clergy reserves, and 12s. 6d. for school lands—the two latter classes being often found in detatched lots in settled parts of the country. The price has not varied very considerably since that period. There are still vast wildernesses unsurveyed.

Population. The population of Canada East is estimated according to the mean of the calculation, by Colonel Taché, Mr. Cauchon, and Mr. Crofton, founded on previous censuses. The result shows a population of 768,334 in Canada East, in 1848. The census for Canada West, for the same year, give 723,292 souls; so that the population of the Province is about 1,491,626 souls. The ratio of increase has been very different at different periods, owing to the fluctuations of the volume of the stream of emigration. The following figures will give some idea of the progress of population respectively, in the two sections:—

CANADA EAST.

In 1825	423,630	In 1848	768,334	Increase, 23 years	334,704

At this rate the population of Eastern Canada will require about thirty years to double itself.

CANADA WEST.

In 1825	158,027	In 1848	723,292	Increase, 23 years	565,265

So that in Western Canada the population doubled itself in about eleven years. It is obvious, however, that this method of estimating the increment of population, however appropriate for countries which depend entirely upon the natural mode of reproducing the species, is of little use in countries sparsely inhabited, and receiving their largest augmentation of population from without. The report gives the following comparative statement of the progress of population in ten years, in the two sections of the Province, in

Great Britain, and in the United States. Increase in Great Britain, from 1831 to 1841, 1.11 per cent; in the United States, from 1830 to 1840, 3.26 per cent; in Canada East, from 1834 to 1844, 3.18 per cent; in Canada West, from 1832 to 1842, 8.61 per cent. But this comparison is liable to the same observation which we have previously made.

The per centage of persons who are deaf and dumb, blind, and idiotic or lunatic, is, we believe, higher in Canada than in any part of the world—a fact, for which we have never heard any plausible reason assigned. From the report we glean the following figures: Of deaf and dumb in Canada East, 1 in every 1,011; in Canada West, 1 in every 1,699; and in the United States, 1 in every 2,482. Of blind in Canada East, 1 in every 1,328; Canada West, 1 in every 1,621; and in the United States, 1 in every 2,482; and of lunatics and idiots there are in Canada East, 1 in every 1,515; Canada West, 1 in every 968; and in the United States, 1 in every 979.

The proportion of all classes afflicted by any of these calamities, throughout Canada, is 1 in every 370, and in the United States, 1 every 533.

The number of paupers in Canada East is set down at 1 in every 399 of the population in 1831, and 1 in every 151 in 1844—an increase which appears quite unaccountable. In the State of New York, in 1835, the proportion was 1 in 318. In Canada West the paupers are but 1 in every 1,469. It must be observed, however, that these consist principally of the aged and infirm; and except the monastic establishments of Canada East there is no public provision for the poor in Canada. In the United States, the persons put down as paupers, are, we believe, really living on the public provision; and it is probable that the census does not include in this class those indigent persons supported by their friends and neighbors, who make up the entire number in Canada. It is evident, at any rate, that in this respect Canada has a great advantage over the much bepraised "Empire State," on the south side of the St. Lawrence. As an encouragement to spinsters who may incline to try their fortune in Canada, we may mention that the proportion of the sexes throughout the country is about eighty-eight females to one hundred males, so that bating fresh importations, twelve gentlemen out of every hundred must be constrained to the desolate state of bachelorship. The statistics of schools and school attendance for Canada West—unfortunately there are none for Canada East—are perhaps the most pleasing part of the report. The Common Schools, which, in 1842, numbered only 927, had increased, in 1848, to 2,464; and the attendance of children under fourteen years of age, from 13 per cent of the entire number in 1842, to 24.27 per cent in 1848. Or taking the children between the ages of five and fifteen, the proportion of those who attended school increased from 22 per cent in 1842, to over 42 per cent in 1848. If this exhibits a favorable degree of advance in intellectual culture, we have other items, which afford encouraging proof of increasing material prosperity. Thus the male farm servants who, in 1842, were but 3,184, had increased in 1848 to 7,514—far more than double. "This," says the compiler of the report, "affords direct evidence of the increasing prosperity of the agricultural body of Western Canada." It moreover furnishes an excellent demonstration of the inexhaustible field for successful emigration, which farm laborers may find in this country. It may safely be affirmed that every steady man of the large number who have thus been added to the population of farm servants, has a fair prospect of employing laborers on his own farm, in the course of a

moderate number of years. The increased number of females employed as domestic servants may also be looked on as a further indication of the same character. In 1842, the number of persons employed was one-seventh of all the unmarried females between the ages of fourteen and forty-five. In 1848, this proportion had increased to one-sixth.

Religious Census. Under this head we have the following :—

Church of England		166,340
Church of Scotland, Presbyterians	65,762	
Free church, Presbyterians	62,690	
Other Presbyterians	19,730	
		148,182
Wesleyan Methodists	87,516	
Episcopal Methodists	35,731	
Other Methodists	14,505	
		137,752
Church of Rome		119,810
Baptists		28,053
Lutherans		7,186
Total		607,323
Deficiency		115,969
Grand total		723,292

This enormous deficiency of nearly a sixth of the whole population, is partly accounted for in the remarks accompanying the census—25,000 not being returned at all in the religious head, and 80,000 being classed under the head of "no creed or denomination." In 1842, the deficiency amounted to 80,000.

Agricultural and other property. The information on this subject is principally to be found in the enumerations prepared for the purpose of local taxation in Canada West. We find in these returns an account of the cultivated lands, grist-mills, live stock, carriages, and other kinds of property assessed by the District Councils. The steady increase, for twenty-three years, without any considerable falling off, is highly instructive. We give the value of assessed property for every year, from 1825 to 1848, both inclusive:— £2,256,874 ; £2,409,064 ; £2,442,847 ; £2,579,083 ; £2,735,783 ; £2,929,269 ; £3,143,484 ; £3,415,822 ; £3,796,040 ; £3,918,712 ; £3,880,994 ; £4,605,103 ; £4,431,098 ; £4,282,544 ; £5,345,372 ; £5,607,426 ; £6,269,398 ; £6,913,341 ; £7,155,324 ; £7,556,514 ; £7,778,917 ; £8,236,677 ; £8,567,001.

In the same time the number of grist-mills had increased from 232 to 527, and of saw-mills from 394 to 1,489 ; the number of acres under cultivation, from 535,212 to 2,673,820 ; of houses, from 8,876 to 42,957 ; and of horses, oxen, milch cows, and young cattle together, from 121,206 to 481,417.

The comparison of Canada West with the State of New York, in these particulars, is by no means calculated to encourage the erroneous impressions, for erroneous we have always considered them, of the superiority of of our neighbors on the south of the St. Lawrence. From the census of the State of New York, for 1835—the latest land census we have at hand—we learn that, after two hundred and twenty-one years of settlement, New York had a population of 2,174,517 souls, and 9,655,426 acres of cultivated land =one acre to every 4½ of the population; whereas the census of Canada West, for 1848, shows that, after only seventy years settlement, we possess

the much larger proportion of one acre to every 3¾ of the population, the quantity of cultivated land being, as we have seen, 2,673,820 to a population of 723,292.

Let us now see how our wealth in cattle, &c., compares with that of our neighbors. According to the enumeration already given from the assessment rolls of the District Councils, the Western Canadians possess one head of cattle and horses together, to every one and four-tenths of the population; but this census, taken for the purpose of taxation, excludes all animals which are not taxed. The census returns of the commissioners, which include the exempted classes, makes the number of neat cattle and horses 717,234, instead of 481,417. As no one has any interest in exaggerating the return to the commissioners, while there is a manifest profit in diminishing the number of animals assessed for taxation, it is probable that the larger return—besides the exempted classes—may include many animals not enumerated by the District Councils, and that it is the most correct. The census by the General Government of the United States, taken, we believe, merely for statistical purposes, gives 2,385,787 horses and neat cattle for the State of New York. That is nearly one head to every head of the population. Our own proportion, taking the census returns as the truth, is little nearer one head than the New York ratio; or taking the smaller return for assessment, is equal to one head for every one and three-quarters of the population. But New York has been settled two hundred and twenty years, and her farmers are the sons of flourishing men, who tilled the same land on which their sons reside: a great proportion of our farmers settled in the wilderness, with no other riches than stout arms, and resolute hearts.

Here is another pleasing statement. The pleasure carriages in Upper Canada—in which none are included that are ever used for agricultural purposes—were 587 in 1825, and 4,685 in 1847. The population had increased three-fold: the pleasure carriages eight-fold—a striking proof of augmented wealth and comfort.

We have ourselves prepared many of these calculations. Mr. Crofton has provided the following to our hands, which strikingly sustains the remarks we have made relative to the supposed superiority of the United States.

We give only so much of the table as will show the results: it is an account of the crop in Canada West for 1847:—

Wheat..... bush.	7,558,773	Maize.....bush.	1,137,555
Barley.....	515,727	Buckwheat	432,573
Oats.....	7,055,730	Peas.....	1,753,846
Rye.....	446,293	Potatoes.....	4,751,331

The value of this crop is estimated at £2,676,285 currency. Here is the comparison of the crops of Canada West, with those of the United States:—

	UNITED STATES. Quant. per inhabitant.		CANADA WEST. Quant. per inhab't.	
	1840.	1847.	1842.	1847.
Wheat.....bush.	4.96	5.50	6.62	10.45
Barley.....	0.25	0.28	2.12	0.71
Oats.....	7.21	8.09	9.85	9.75
Rye.....	1.09	1.42	0.60	0.62
Buckwheat	0.43	0.56	0.72	0.60
Maize.....	22.12	26.01	1.42	1.57
Potatoes	6.53	4.86	16.62	6.57
Peas.....	No return.		2.45	2.42

The following exhibits a comparison with States celebrated for their wheat

crops—the statement is for 1847 :—New York State raised five bushels to each person; Pennsylvania seven; Virginia ten; Ohio ten; Indiana eight; Canada West, as we have seen, exceeded them all; her produce being nearly ten and one-half bushels to each inhabitant.

We have taken these calculations from Upper Canada, because the census of the Eastern part of the Province is not very reliable, and is, doubtless, considerably under the truth. We find, however, the whole produce of Canada East in bushels, for the year 1844, set down in the census of that period as 21,325,596=30 bushels per unit of population. This is about one-fourth less per head than the produce of Canada West for 1842. This, we believe, is a much smaller difference between the produce of the two sections of the Province than is generally supposed to exist. If it be remembered that the Eastern part of Canada comprises a large population, who inhabit the bleak shores of the St. Lawrence, below Quebec, the far greater portion of the lumbering population, and the two largest cities, it will be evident that when opinions are compared with figures, the inferiority of the really good portions of Lower Canada is by no means borne out. But to arrive at a just appreciation of the truth, we must also remember the calamitous visitation of the wheat fly, which, for several years before and after the date of our statement, (1844,) so cruelly disappointed the hopes of the Lower Canadian farmer. Here are the statistics of this article of produce, for three different periods. For 1831, by Bouchette's estimate, 3,404,756 bushels of wheat; for 1831, by census, 3,404,756 bushels; for 1844, by census, 942,835. The introduction of new seed, especially of Black Sea wheat, however, has, it is hoped, remedied this evil: it is, at any rate, well known that the wheat crops in Canada East, for the last three years, have been very much larger than for several years before. We have little doubt, that, with the stimulus which will be afforded to agriculture by the Portland Railway, running completely through the great wheat-producing country, on the banks of the Richelieu, the districts of St. Francis, Montreal, and Ottawa, will shortly be little behind the most favored parts of Upper Canada in weight of crop, as they certainly equal them in natural capacity, and excel them in nearness to market.

Our European readers will probably be surprized to hear that Canada is a very large sugar-producing country. The manufacture of maple sugar in 1848, in Canada West, according to the census of that year, was 3,764,243 pounds, to which Mr. Crofton thinks 10 per cent should be added for omissions. This brings the crop up to 4,160,667 lbs., or nearly six pounds to each individual—and we have specimens on our desk, which no one could distinguish from the best "lump." Of wool there were 2,339,756 lbs. produced in 1848, which is an increase of more than 50 per cent in six years. Of tobacco, 1,865 lbs.; of flax, 41,599 lbs.; of beef and pork, 99,251 barrels.

Manufactures. We come now to manufactures; premising that when we speak of United Canada, we take the imperfect census of Eastern Canada, as representing the statistics of that part of the Province. In the United Province, then, there are 661 fulling and carding mills; 130 breweries; 174 distilleries; 389 tanneries; 1,740 asheries; 10 paper mills; 19 trip hammers; 14 oil mills; and 9 nail factories. Besides these, there are, in Western Canada, 1 rope-walk; 1 candle factory; 1 cement mill; 1 salaræ-tus factory; 8 soap factories; 11 pail factories; 1 last factory; 3 tobacco factories; 2 steam-engine factories; 1 ship-yard; 3 potteries,; 1 vinegar

factory; 5 chair factories; 2 brick-yards; 1 ax factory; 6 plaster mills; 1 comb factory; 10 shingle factories; 67 woolen factories; and 105 founderies. A very large number of these items are evidently much below the truth; and returns of a like character, which are altogether omitted, might be made for Canada East. In fact, this statement is almost worthless.

The following is the produce of some of these factories—all in Canada West:—Of fulled cloth, 624,971 yards; of linen, 71,715 yards; flannel, 1,295,172 yards. The total increase in the annual production of these articles in six years, has been 664,141 yards—the increase being very nearly equal to one yard for each individual of the population. The whole of the increment, however, has occurred upon the woolen goods, as there is a considerable falling off in linens, which we have deducted, to arrive at the above figures.

Shipping. On the water, "the progress of the nation" has been as satisfactory as on shore. Thus we find that the Upper Canada shipping amounted, in 1838, to 4,505 tons; in 1839, to 5,787 tons; and in 1840, to 8,629½ tons. The tables go no farther than that year; but there is every reason to suppose that the progress has been, at least, as rapid since. On the canals a new class of steamers has been made to supersede the old 500 barrel vessels; and cargoes of 2,800, or 3,000 barrels of flour may now be conveyed from Chicago to the ocean—a distance of 1,500 miles—without breaking bulk, so that there is every reason to look for a greatly increased trade in this department.

Revenue. Since the union the net revenue of the Province has been as follows:—For 1842, £365,505; 1843, £320,987; 1844, £514,783; 1845, £524,366; 1846, £512,993; 1847, £506,826. The customs in the first year of this period amounted to £265,386; they reached their highest point in 1844, when they were £429,722; and declined to £381,063 in 1847, the last year given in the report. The impost of 1 per cent on the circulation of the notes of chartered banks, rose pretty steadily, except in the year 1843, from £10,277 in 1842, to £16,006 in 1847. Another branch of our revenue, which every Canadian must regard with great anxiety, is that derived from our public works. The table of revenue affords us pleasing grounds for believing that our hopes from these most important enterprises will not prove vain. The net revenue from tolls, in 1842, was £16,369; and it had risen, in 1847, to £42,557. The gross revenue—a better criterion of the amount of traffic on these gigantic highways—presents a still more encouraging statement. There was, as will be seen, a slight decrease in 1845; but on the whole, the progress of receipts since 1842, has been large and steady. Here follow the figures for each year, from 1842 to 1847, both inclusive—£24,232; £34,604; £44,429; £41,039; £61,486; £83,335. This increase is far more rapid than in any five years in which a fair comparison can be made with the New York canals, and fully bears out the wisdom of those by whose enterprise our public works were set on foot. Our canals are not yet finished, and the class of vessels for which they are intended, could only commence their trips in the last year of this period. Under these circumstances, let us compare the progressive increment of our tolls, with those of New York State, for a period of six years after the Erie Canal—the rest are too inconsiderable to be of consequence in the calculation—had been seventeen years in operation. In 1837 the New York State tolls amounted to $1,293,129; and in 1842 to $1,749,204=36 per cent increase in six years. Our own tolls, according to the figures given above,

increased at the rate of 240 per cent in the same length of time. But this statement affords a very inadequate comparison, for during the period we have taken, the New York State works were in full operation, whereas some of the principal Canadian works only began to yield a revenue at different dates during the period. For example, we have only five years' revenue of the Welland Canal, which yielded more than one-third of the whole revenue in 1847; only three years of the Beauharnois Canal, which yielded last year £3,959; and only one year's revenue from the Williamsburg Canal. We understand there is a considerable increase in the tolls of 1848.

Public Debt. It is worth while to compare the revenue of these works with the obligations of the Province to the public creditor. The interest on the whole Provincial debt in 1847, was £148,264. We have seen that the public works in the same year yielded £42,557 of net revenue; the enormous difference between that sum and the gross receipts arising from the deduction of £31,307, for repairs. This is an unusual charge, and should not of course be made to fall upon one year. That item, on an average of the six years, which is the only fair manner of arriving at the actual net revenue, was but £10,500. These figures show that our public works would average net profits, at the same rate of gross receipts as in 1847, of £63,364 =42 per cent of the entire interest on the public debt. In spite of all the ridicule which has been thrown upon these works, and upon their author —in spite of all the grumbling of some of the ultra Lower Canadians, of French origin, as to the debt which has been created by their construction, it is every year made more manifest that our public works will shortly yield a surplus revenue, which the present malcontents will be very happy to share. It is very instructive with reference to this subject, to remember that the Chambly Canal—the only one entirely unconnected with Canada West —is the only one which does not yield a revenue, and that this work is a yearly expense to the Province of about £200.

The taxes paid by the people of Canada for the purposes of the Provincial Government, is comprised in the following items. Customs, excise, light-house and tonnage duties, bank imposts, militia commissions, and various fines and forfeitures.

The whole of these amount to £429,044 per annum; about 5s. 8d. per head.

Exports and imports. There is some difficulty in comparing the extent of our over sea trade, with that which is transacted with the United States, owing to the different manner in which the quantities are respectively estimated.

In 1848, there was here as elsewhere a very great falling off in almost every description of business, so that neither our imports nor exports by sea equalled in value those of any preceding year since 1843. The actual value of exports by sea, in currency, as given in the official tables for 1848, is £1,749,167, which is less by £831,125 than in the preceding year; but no doubt a portion of this difference is to be imputed to the lower prices of all kinds of articles. The reduction in the value of exportations is, in round numbers, about 33 per cent, and the reduction in prices appears from a rough inspection of the tables in the Broker's Annual Circular, to account for 10 to 15 per cent of this difference. On the other hand, the exportation to the United States has greatly increased since 1847:—

Flour in 1847	£24,722	9	3	Flour in 1848	£310,965	9	3
Butter "	1,016	16	0	Butter "	8,722	6	0
Ashes "	6,052	0	0	Ashes "	43,000	0	0
Wool "	5,654	0	0	Wool "	5,324	16	1
Horses "	15,723	15	0	Horses "	33,451	15	0
Wheat "	9,421	15	0	Wheat "	63,127	5	6
Total	£62,590	15	3	Total	£464,591	5	10

If we add 15 per cent to this, to represent the difference in values, caused by lower prices in 1848, we shall have a total increase of southern trade equal to £462,301 currency. Let us see, then, what may fairly be set down as the whole decrease, in quantity, of our exports last year. The apparent decrease by sea, reckoning in value, was £831,215 : less, for decreased prices, at say, 11 per cent on the whole export of 1847, £294,841=for actual decrease, as representing quantity, £536,284 ; increased export to the United States, £462,301 ; will leave for the actual diminution of the trade of the whole Province as representing quantity, only £73,983. For the exports of Canadian goods to the United States, we have taken the American Customs returns of goods entered there. It is certain, however, that this must be very far below the true value. The returns from our own custom-house is as follows, for 1848 :—

Produce of the forest	£159,551	6	5
Agricultural production	454,350	0	9
Live stock	54,243	7	6
Other articles	104,287	10	8
Total	£772,432	5	4

" And to this," says Mr. Crofton, " we might add a very liberal per centage ; for, on the most minute inquiry among persons capable of forming an estimate on such matters, it has been universally asserted that many of the articles, particularly lumber, are far underrated, pine lumber especially ; we have certain returns from several saw-mills in Upper Canada, by which it appears that even in those which have given in the quantity manufactured, the produce was upwards of 200,000,000 of feet, and as the consumption does not equal one-half of that amount, we have nearly double the quantity stated for export, that is, allowing the produce of the Lower Canada saw-mills to balance the quantity exported by sea."

We have yet to add the fisheries. We shall then have the following account of our exports, for 1848 :—

By sea	£1,749,167
Fisheries not included	91,252
To United States	772,432
Total	£2,612,851

The imports by sea, in 1848, were £2,107,264 currency, to which are to be added the imports from the United States.

We shall conclude this review by a statement of the quantities of several articles of general consumption, imported into Canada ; it fully bears out the remark of Mr. Crofton, that " in no country do the agricultural classes enjoy a greater degree of comfort, or are liable to fewer privations." Of sugar and molasses, there were imported, in 1847, 20,673,389 lbs. ; add maple sugar, 6,463,845 lbs.=27,137,234 lbs. ; or nearly 18¼ lbs. to each person, besides the large quantity which is believed to be smuggled. Of

coffee, 1,101,621 lbs. paid duty in 1847, and 1,018,803 lbs. in 1848=11 oz. per head. Of tea, the average quantity which pays duty annually, is estimated at 2,817,440 lbs., and the smuggled at 432,560 lbs.=3,750,009 lbs. =to 2 lbs. 4 oz. per head. The importations of foreign coffee and tea, in the United States, as quoted in the appendix from the report of the Secretary of the Treasury to the United States, was, in 1848 respectively—coffee, 8,200,000 lbs.=nearly 6½ oz. per head; and tea, 6,217,111 lbs.=nearly 5 oz. per head. The quantity of wine and spirits which paid duty in Canada, in 1847, was 553,849 gallons, with 2,134,721 gallons of whiskey distilled in the country; and in 1848, 392,580 gallons, with 1,905,150 gallons of whiskey distilled in the country. The average of the two years is, therefore, $1\frac{8}{10}$ gallons per head, men, women, and children—an indication of tolerably hard throttles in Canada.

The compilation of these figures and calculations have occupied many hours of labor, even to the writer who has prepared them in their present state, after the greater portion of the facts had been collected and digested in the report of the Statistical Board; but it has been to us, at least, a labor of love. For it is too much the fashion, not only among our neighbors on the other side of the lines; nor of strangers who pay us a passing visit—it is too much our own fashion to be perpetually depreciating the country in which we live. Hence, the very natural shyness of persons who, desiring to leave England for some country of better promise, avoid Canada, lest their prospects should be deteriorated rather than improved—hence the difficulty of obtaining capital for works, which need only be understood, to command an affluence of money seeking profitable investment—hence much of that yearning for a new state of political existence, which, when magnified by distance, alarms the capitalist still more, lest his funds, if invested here, should be dissipated by intestine commotions. Nothing can be more conducive to our prosperity and advancement, than a well-founded confidence on our own part, that we are, in spite of occasional reverses, prosperous and advancing, and the diffusion among strangers of that information, which will create a general opinion of a similar character abroad. Lord Sydenham, in one of his letters, remarking on his reasons for preferring Kingston to Montreal, concludes thus:—"Besides, there is no pleasure in working for fellows who are always wanting to cut each other's throats." If we can convince the world that there is no danger of having one's throat cut in Canada, and a certainty that the property brought here, with judicious management, will shortly become ten-fold, we shall soon find Canada a favorite place of settlement; and the publication of such facts as we have given above, are the best means of producing this conviction.

Art. V.—COMMERCIAL CITIES AND TOWNS OF THE UNITED STATES.

NUMBER XVIII.

THE CITY OF TROY, N. Y., AND THE TRADE OF THE NEW YORK CANALS AND THE HUDSON RIVER.

An article on the "Commerce, Manufactures, and Resources of Troy," was published in the June number of the *Merchants' Magazine* for 1846, Vol. XIV. Early in 1848 an article was prepared and published in a daily paper, intended to be in continuation of the commercial statistics of Troy, as connected with the canals, and as given in the former for the year 1847. In June, 1848, a further article was prepared, and also published in a daily paper, on the "River Commerce of Troy and Albany." These papers were all furnished by the same hand, the present writer.

A writer in the July number of the *Merchants' Magazine* for the present year, in an article entitled "The City of Albany," treats, among other things, of "the State canals," bringing down their business to the close of the year 1847. So far as his statements extend, the trade of the canals is correctly and truly given. Having omitted, however, to state that that trade, at the termination of the canals, is divided between the two cities, or in any manner to refer to its connection with Troy, an *inference* is broadly given, unjust to the one, and not quite warranted by facts, of the other city. Justice to both cities, and to the readers of the *Merchants' Magazine*, suggests this as a fit occasion to give such extracts from the newspaper articles referred to, as shall set the matter right, and leave no room for misapprehension.

By a wise forecast in the construction of the canals, two markets were opened at their intersection with the Hudson, and where all transhipments to the seaboard must be made, to all interested in the business of them. A spirited and active competition for a participation in this trade, has consequently existed from the completion of the canals, but it is believed to have been an honorable and healthy one. While transport charges and mercantile profits have been reduced, thus essentially benefitting the vast country employing the canals, west and north, no doubt the growth and prosperity of both cities have been very much advanced by it.

Before proceeding to the extracts, it may be proper to state, for the benefit of such readers as may be unacquainted with the local situation of the two cities, that Troy is situated at the head of the *natural* navigation of the Hudson; the navigation is continued by means of a dam and lift lock *only* four miles above, to Waterford, in Saratoga county; that Albany stands six miles below Troy; that the State canals all terminate in, and are lateral to, the Erie Canal, except the Champlain; that the Erie and Champlain terminate in a Junction Canal, a short distance above Troy; that the Junction Canal connects with the river by two terminations, one at West Troy, the other at Albany; that West Troy has grown up on the business of the canals centering at Troy; is separated from it only by the river, some eighty rods wide, and is essentially, in all business interests, a part of Troy; and that the claim of Troy for the canal trade of this point, is undisputed.

But to the extracts:—

New York may well be proud of her canals, and of the rich results of her canal policy. She now only requires to engraft upon those improvements a general railroad system, which shall embrace every important

thoroughfare in the State, before it is considered complete, to assure to herself, through all coming time, that ascendancy in the commerce of the country, for which her natural position so eminently fits her. Railways afford the means of rapid travel and transport, which the advancing spirit of the age now demands, and for which nothing else can provide. Let legislative sanction be freely given to private enterprise, and the time is not distant when this State shall become an example to others in railway advantages and enterprise, as she long has been in her canal system.

The citizens of Troy cannot be indifferent to these statistics. Their interests are interwoven with those of the canals. The rapid growth and prosperity of the city has mainly resulted from the advantages of these channels of trade. It is ground of encouragement to note the constantly increasing canal business of the city, and the successful competition she is enabled to maintain with other older and more populous markets, in the canal trade of the State.

The following statements are gathered from the returns made to the Canal Department of the Controller's office, and their correctness are entitled to entire confidence:—

BUSINESS OF THE NEW YORK CANALS FOR 1847—CANAL TOLLS.

The amount received for tolls, fines, and penalties, from the canals of this State, during the season of 1847, was	$3,635,380
Received during 1846	2,956,121
Excess in favor of 1847	$679,259

Of this amount there was received from the—

Erie Canal	$3,333,347	Excess over 1846	$384,072
Champlain Canal	120,098	" "	12,003

Amount of tolls, &c., received in 1847 at—

West Troy	$350,366	Excess over 1846	$11,727
Albany	358,133	" "	94,581
New York	129 444	" "	89,706
Aggregate tolls collected at tide-water	$837,943	" "	$196,014

CANAL TRADE AT TIDE-WATER.

Number of canal boats cleared at each office, each clearance denoting an arrival and departure:—

West Troy. $11,630 | Albany.. $12,637 | New York.. $1,560 | Total.... $25,827

	West Troy.	Albany.	New York.
Tonnage of property arrived	853,783	855,150	240,812
" " sent up	162,335	120,462	46,964
Value " arrived	$37,528,174	$34,837,812	$14,558,882
" " sent up	36,326,341	27,412,384	14,240,051

All boats arriving at tide-water are required by law to report at the place where they enter the river, consequently, those discharging at New York are included in the returns either of West Troy, or Albany, and therefore are twice reported.

It should be remarked, in reference to the number of canal boats navigating the canals during the year 1847, that there were added in that year 1,500 new boats to the canal tonnage, averaging about 80 tons each. This

equals the tonnage of *all* the boats registered on the canals in 1844. The comparative capacity of new and old boats now in service, will be shown by the fact that those navigating the canals in the latter year averaged but about 65 tons.

To ascertain the comparative quantity and value of all the property arriving and departing from West Troy, and from Albany, let *one-half* of that entered and cleared at New York, which is not already included in the collector's returns of those two places, be added to each. It is believed capable of demonstration, that at least *three-fourths* of all the property entered and cleared at New York, passes from and into the canal at West Troy; in computing it, therefore, at *one-half*, the trade of Troy is undervalued, at the expense of Albany. But it is intended to make no claims upon the New York canal trade, that can in any quarter be questioned.

To exhibit the aggregate of the canal trade of 1847, at tide-water, I proceed to classify and add together the returns already stated:—

	Tons.	
Property arrived at West Troy	853,783	
" " Albany	855,150	
		1,708,933
" sent up at West Troy	162,335	
" " Albany	120,462	
" " New York	46,964	
		329,761
Total		2,038,694
Property arrived and cleared in 1846		1,362,313
Increase of 1847		676,381
Value of property arrived at West Troy	$37,528,174	
" " " Albany	34,837,812	
		$72,365,986
" " sent up at West Troy	36,326,341	
" " " Albany	27,412,384	
" " " New York	14,240,051	
		77,978,776
Total		$150,344,762
Value of property arrived and cleared in 1846		115,732,680
Increase of 1847		$34,612,082
The number of boats cleared at tide-water has already been stated at		25,827
Add for arrivals of the same		25,827
Total of arrivals and departures		51,654

It may lead to a more just appreciation of the magnitude of this trade, to remark, that it exceeds, in a small amount, the greatly increased export trade of the United States for the same year, and considerably *exceeds* the *ordinary* amount of its external import, or export commerce.

SUBDIVISION AND COMPARISON BETWEEN TROY AND ALBANY—ARRIVALS AND DEPARTURES.

	West Troy.		Albany.	
Number of boats cleared	11,630		12,637	
New York clearances, one-half to each	780		780	
		12,410		13,417
Add for arrivals		12,410		13,417
Total		24,820		26,834

	West Troy.	Albany.
Property arrived.....tons	853,783	855,150
" sent up.....	162,335	120,462
" " from New York, one-half to each.....	23,482	23,482
Total.....	1,039,600	999,094

	West Troy.	Albany.
Property arrived .....value	$37,528,174	$34,837,812
" sent up.....	36,326,341	27,412,384
" " from New York, one-half to each.....	7,120,026	7,120,026
Total.....	$80,974,541	$69,370,221
Tolls as above stated.....	$350,366	$358,133
Received at New York for property moving on the canals, one-half to each.....	64,722	64,722
Total.....	$415,088	$422,855

It will be observed that while Troy has, in the comparison, enjoyed *twelve* per cent more in value, and 40,000 tons in tonnage of this trade, Albany has cleared 1,000 more of boats. This shows that lumber, and other cheap and bulky property, has tended to the latter market, while the more valuable trade of the country has tended to the former. As tolls bear more relation to tonnage than to value, it shows also *how* a greater amount has been collected on the trade of the least value.

To estimate that one-half of the property entered and cleared at New York may have left and entered the canal at Albany, as has already been done, is a stretch of liberality that the citizens of Troy may not justify; but full faith to these statements is challenged, wherever they may be read, and the facts bearing on this point are not as well known abroad as at home; the fair claims of Troy, therefore, have not been insisted on. Every one interested may draw his own conclusions. But Troy, indeed, as constituting the market at the head of tide-water navigation, and connected with the canal trade of this region, can well afford to be liberal in such estimates. Her superior advantages in competing for that trade, are more and more firmly established by the results of every advancing year.

Grain and flour being the staple productions of the Northern and Western States, constitute the largest items of the transport trade of the canals. In 1847, the quantities of wheat, corn, and flour, received by the canals at Albany and Troy, respectively, were as follows:—

Wheat received at Troy.bush.	2,609,951	Corn received at Troy....bush.	3,025,576
" " Albany...	1,296,625	" " Albany.....	2,995,563
Excess in favor of Troy.....	1,313,326	Excess in favor of Troy.....	30,013

Flour received at Albany.....bbls.	2,376,675
" " Troy.....	1,575,047
Excess in favor of Albany.....	801,628

While Troy, by her greater amount of machinery and hydraulic privileges, commands much the largest trade in grain, receiving in wheat, in that year, more than double the quantity of Albany, the latter is the largest market for manufactured flour.

The item next in importance in the canal trade, is lumber. Having no data to give the comparative arrivals at both cities, the receipts at Troy, of the leading articles of that production, is given for 1847. Albany, no doubt,

enjoys the greater half of that trade, and her receipts, consequently, must have been somewhat larger than those of Troy:—

Boards and scantlings arrived at Troy.....feet	152,393,700
Timber, " "	1,054,100
Staves, " "	17,986,100
Shingles, " " .....M.	43,421
Wood, " " .....cords	13,470
Total tonnage of lumber.....tons	323,561
Total value.....	$4,861,201

We now come to the extracts from the last paper referred to in the introduction.

RIVER COMMERCE OF TROY AND ALBANY.

The navigation and commerce of Troy and Albany, passing down and up the Hudson River, to and from the city of New York, and intermediate ports, during the season of 1847, estimated from the best data extant, was as follows:—

RIVER COMMERCE OF TROY.

From statistics carefully taken by competent persons, and from reliable sources, there were found to be, in the season of 1844, the following number of vessels, trading to and from Troy, and navigating the river during the season of navigation:—

8 Passenger steamers, owned in Troy.....tons	4,028
10 Towing steamers, partly owned in Troy.....	2,775
24 Freight barges, owned in Troy	7,256
77 Masted Vessels, " "	6,253
119 Vessels, total tons.....	20,312

There were trading to Troy, foreign vessels, in the same season, as follows:—

4 Towing steamers.....tons	655
20 Freight barges.....	2,533
256 Masted vessels.....	24,716
280 Foreign vessels, total tons.....	27,904
119 American vessels, total tons.....	20,312
Total.....	48,216

Similar statistics taken in 1841, entitled to equal confidence, furnish the following tonnage for that year, viz:—

Passenger steamers.....	1,505	tons,	increase to	1844,	as above,	150	per cent.
Towing steamers	2,355	"	"	1844,	"	19	"
Freight barges.....	4,736	"	"	1844,	"	75	"
Masted vessel.....	5,460	"	"	1844,	"	15	"
Foreign freight barges.....	125	"	"	1844,	"	1,800	"
" masted vessels.....	13,390	"	"	1844,	"	84	"
Total.....	27,571	"					

In estimating the freight transported, the passenger and towing steamers are excluded, because the amount would be comparatively trifling, and no sufficient data is at hand to ascertain it. On this river freights are chiefly laded in barges and sail vessels. These are generally capable of carrying a much greater tonnage than their measurement indicates, but as a portion of the season they may not be *fully* loaded, it is deemed fair to compute

their average freights as only equal to the measured tonnage. This will also sufficiently provide for equalizing the freights up and down the river, as is done in this estimate, when it is well known that the exports down furnish a much greater tonnage than the imports up. Averaging the exports and imports at the admeasured tonnage is deemed to be within the truth on this point. It has been found that freight barges, towed by steamers, as they are in this navigation, averaging thirty trips a season, and sailing vessels sixteen. Foreign freight barges were estimated to have made three trips each to this port, in 1844, and it is believed to be entirely safe to estimate the trips of foreign sailing vessels at two in a season.

In 1843, the number of canal boats entered and cleared at the collector's office at West Troy, the office for this port, and passing into and out of the river at this point, was 15,347, of which it was estimated that 350 proceeded to New York without transhipment here, transporting up and down, 42,000 tons of freight. The average tonnage of these boats was then 60 tons. It has now risen to 80, or more. In 1847 the number of boats entering the river, and departing from it, at West Troy, was 24,820. Adopting the same proportion for the number that went through to New York, we have 565 boats, and at their increased capacity, 91,700 tons of freight. The proportion of boats going through has materially increased, however, since the former period, and this estimate should justly be stated at a larger amount—say 150,000 tons.

Upon the foregoing data, and computing the increase upon the tonnage during the three years from 1844 to 1847, at the same ratio that it has been ascertained to have been for the same period from 1841 to 1844, we find 24 freight barges in 1844—

Imported .....tons	7,256	
Exported.....	7,256	
Total imports and exports.....	14,512	
At thirty trips each.....		435,360
77 sailing vessels, in 1844, imported.....	6,253	
" " exported.....	6,253	
Total imports and exports.....	12,506	
At sixteen trips each.....		200,096
20 foreign freight barges, in 1844, imported.....	2,533	
" " exported.....	2,533	
Total imports and exports.....	5,066	
At three trips each.....		15,198
256 foreign sailing vessels, in 1844, imported....	24,716	
" " exported.....	24,716	
Total imports and exports.....	49,432	
At two trips each.....		98,864
350 canal boats, through, in 1844		42,000
Total in 1844.....		791,518

For the amount of tonnage in 1847, say freight barges in 1844, 435,360 tons, at 75 per cent advance.....	761,880
Sailing vessels in 1844, 200,096 tons, at 15 per cent advance.....	230,110
Foreign freight barges in 1844, 15,198 tons. [As this kind of freighting had but a small beginning in 1841, and the increase to 1844, being over 1,800 per cent, affords no just criterion of the subsequent growth, 100 per cent only is added.]	30,396

Foreign sailing vessels in 1846, 98,864 tons, at 84 per cent advance....	181,810
Canal boats, through, in 1847.....	150,000
Total in 1847.....tons	1,354,196

The canal returns of the State for 1847, show, as has already been stated, a total of property arrived and departed at West Troy of 1,039,000 tons. When it is recollected that the chief part of this tonnage is only transhipped at Troy, and goes through to New York for a market, or comes from that port for the interior, it must be seen that the above estimate is low. It claims but about 35 per cent of the transit business of the place, for the large amount of tonnage received and distributed at this point, for the trade by railways, and of the sections east and north that yet depend upon land cartage for their transport.

This estimate has been submitted to experienced and judicious gentlemen, long connected with the business of the Hudson and the canals, who concur in the opinion that the resulting amount of the river freights as here indicated, is *moderate*, probably below the actual amount, and that it is entitled to confidence. The number of river vessels owned at Troy, and employed in its navigation, has been much increased since 1844. We have seen that it was then 119. It is believed to have been near 200, in 1847.

The *value* of the property constituting this tonnage may be very nearly approximated by applying to it the ascertained result of the canal tonnage of 1847, arrived and departed here. The value of 1,039,000 tons passed into and out of the river at West Troy, was found to be $80,974,541. At the same ratio of value to tonnage on the 1,354,196 tons of tonnage, gives $104,000,000, as the value of the transit trade of Troy, moving upon the Hudson River in 1847.

RIVER COMMERCE OF ALBANY.

Applying the same ratio of river commerce to the canal trade of Albany, as furnished by the returns of the canal department of the Controller's office, for the year 1847, will give as follows:—The canal tonnage entered and cleared at the Albany collector's office was 999,094 tons; the value $69,370,221. The ratio of canal to river trade as estimated for Troy, both as to tonnage and value, gives 1,300,000 tons, and a value of $90,000,000, for the river commerce of that port. But as we find by the canal returns referred to, that the *number* of boats entered and cleared at Albany, in 1847, was 2,014 more than at West Troy, it appears certain that more lumber, and other cheap and bulky property, must have tended to that market, than to Troy. Such property requires more of the capacity of vessels navigating the river, in proportion to its value, and when transhipped pays freight by measurement more generally than by weight. This would go to show a greater requirement for river craft at Albany than at Troy. A due regard to this fact seems to justify a larger estimate than the canal returns indicate. To meet this view of the case, it is deemed but just to allow for the river trade of that port a tonnage of 1,400,000 tons, and a value of $96,000,000.

THE WHOLE RIVER COMMERCE OF TROY AND ALBANY.

Thus, then, we find the whole trade of the Hudson River, from the two ports of Albany and Troy, to amount to TWO AND THREE-FOURTHS MILLIONS OF TONS, and a value of TWO HUNDRED MILLIONS of dollars. This is by no means a trade exclusive to the State of New York, but belongs to

the twelve to fifteen States of this Union, to which the Hudson River is the great thoroughfare connecting them with the seaports of the Atlantic, and the trade of foreign countries.

Intimately connected with the latter branch of this subject, are the delays and dangers in the navigation of the upper part of the Hudson River. The following estimates on this point, extracted also from the same article, relate *solely* to the obstructions within a few miles of Albany, known as the Overslaugh. Other shoals, of less magnitude, exist in this portion of the river. Enough is exhibited in what follows, to show the urgency of the demand upon the General Government for aid in improving the navigation. No other public highway in the Union can be more strictly national in its character. No other claim upon the public treasury can be stronger, or more just.

DETENTIONS AT THE OVERSLAUGH.

One of the oldest and most experienced forwarding merchants of Troy, a gentleman entitled to the highest confidence, estimates, that by the shoal water on the bars known as the Overslaugh, freight barges, towed by steam, are detained an average of one tide, or twelve hours each trip; and that sailing vessels are obliged to lay there an average of three days, each way, making six days in each trip during the season. He estimates the loss or damage for such detentions at $20 per day for barges, and $10 for sail vessels. These estimates appear to be reasonable and moderate, and worthy of adoption.

Referring, then, to the statistics of 1844, before given, and adopting the number of vessels of that date, gives—

780 trips of freight barges, 12 hours' detention each trip, equals 380 days, at $20 is	$7,800
1,944 trips of sailing vessels, 6 days' detention each trip, is 11,664 days, at $10 is	116,640
Amount	$124,440
Add for the detentions to the Albany navigation, upon the proportion of its estimated tonnage, of 1,400,000 tons	129,049
Annual loss by detentions	$253,489

This, it will be perceived, refers *only* to the navigation of freight vessels, as they were in 1844: and yet amounts to no less a sum than a *quarter of a million* of dollars. When we add to this the increase of business, and the cost of these delays to the numerous passage and towing steamers, with which the river is literally and daily thronged, and the losses and sacrifices of the hundreds of thousands of passengers they transport, which may be safely estimated at an equal, if not a larger amount, we have the enormous sum of *half a million* of dollars, annually suffered by this trade from this cause alone. This is a tax imposed upon all the people in the several States, concerned in this navigation, whether directly, or remotely connected with it. An appropriation by government, to the amount of one year's loss, would go far to remove, permanently, all the obstructions causing it.

Art. VI.—COMMON CARRIERS.*

THERE is scarcely any department of the law which is more important, at the present day, than that relating to obligations of those to whom are entrusted the property of individuals for transportation from place to place, and yet we are surprised to learn, from the preface of Mr. Angell to the volume before us, that since the work of Jeremy, in 1815, and that of Jones, in 1827, no book has been published which was devoted entirely to its exposition. The author remarks, that "the late learned Justice Story, in his well-known and highly-valued 'Commentaries on the Law of Bailments,' has indeed treated upon the subject, but then he has done so by considering it only as a branch of his general subjects; and of course his exposition of the law of carriers is not nearly so comprehensive and satisfactory as it would have been, had he considered it independently, or by itself."

To a general reader, not a lawyer, there is much in the cases, on this subject, to interest. Scarce an accident occurs on any of our waters, whether by explosion, fire, or collision, that the circumstances are not all subsequently reviewed in the courts, upon a suit brought to recover the value of goods or specie, sacrificed by alleged negligence on the part of the carrier. In a recent case in the Superior Court of the United States, growing out of the loss of the Lexington, by fire, in Long Island Sound, Mr. Webster drew a graphic and impressive picture of the scene on board the burning boat, the frightful shrieks of the passengers, calling to their friends and relations, and the crew, appalled by the awful scene, losing all presence of mind, and becoming themselves the first victims to the catastrophe.

The general obligations of proprietors of public conveyances, in this respect, are pretty well understood; but there is great diversity in the decisions as to how far a carrier may limit his liability by general notices.

"There never have been many questions, and but few, comparatively, are likely to arise, upon the interpretation of *positive* or *express* contracts entered into for the transportation of goods. Many of the questions which have, of late years, in England, engaged the attention of courts, have been upon implied contracts, or upon the validity, obligation, and effect of the printed or written NOTICES given by common carriers, in the course of their public employment, and posted up and distributed, which announced that the carrier would not be accountable for property of more than a specified value, unless the owner had insured and paid an additional premium for it. * * * * *

"It is generally admitted, in respect to the subject of notices, first, that a carrier's general run of goods may be estimated, and notice given that he will not be answerable for those of a different description, as jewelry, money, &c., of extraordinary value; secondly, that far the greater risk attending goods of such a description, and the greater care, required a higher consideration, partly as hire, and partly as insurance, should be given. The English decisions, for the most part, have gone only to this extent."

Two of the English cases, however, go so far as to permit a common carrier, without an express contract, and at his own discretion, by a mere general notice, to put an absolute limit on the public duty and responsibility which are imposed upon him by public policy.

In England and the United States, the doctrines of these cases, as put

* A Treatise on the law of Carriers of Goods and Passengers by Land and Water. By Joseph K. Angell, pp. 647, with appendix. Boston: Charles C. Little & James Brown. London: Stevens & Norton.

forth by Lord Ellenborough, have been critically examined, in a number of instances.

In Hollister *vs.* Nowlen, in the Supreme Court of New York, it was expressly decided, in 1838, that stage proprietors, and other common carriers, could not restrict their common law liability by a general notice, that the "*Baggage of the passengers is at the risk of the owners.*"

"The same point was decided at the same term of the court, in the case of Cole *vs.* Goodwin, in which the whole doctrine of notices generally, is elaborately and learnedly discussed, by Justice Cowen."

The same doctrine has been recognized in Ohio, Georgia, Connecticut, New Hampshire, Massachusetts, Maine, Pennsylvania, and in the Supreme Court of the United States. In Maine, the decision is as follows:—

"Unless a common carrier by water limits his responsibility by the terms of a bill of lading, or otherwise, he cannot escape from the obligation to deliver a shipment according to its destination, unless prevented by the act of God, or the public enemy. A loss of the property, by accidental fire, furnishes no sufficient excuse; although the carrier might be excused, if the non-delivery was caused by lightning."

The case of "the New Jersey Steam Navigation Company *vs.* The Merchants' Bank," better known as the case of the Lexington, in the Supreme Court of the United States, is one of the most recent, and is frequently referred to by Mr. Angell, in the course of his work.

"It appeared that W. T. Harnden was engaged in the business of carrying, for hire, packages of goods, specie, and bundles of all kinds, for any persons who would employ him, to and from the cities of New York and Boston; and that his mode of conveying them was the established public conveyances between those cities. That, in the exercise of his employment, he had entered into an agreement with the above-mentioned company, by which, in consideration of a certain sum per month, he was to have the privilege of transporting, in their steamers, a wooden crate, of given dimensions, subject to these conditions:—1. The crate, with its contents, to be, at all times, exclusively at the risk of the said Harnden, and the company not, in any event, to be responsible, either to him or to his employers, for the loss of any goods, wares, merchandise, money, &c., to be conveyed or transported by him, in said crates, or otherwise, in the boats of said company. 2. That he should annex to his advertisements published in the public prints, the following notice, which was also to be annexed to his receipt of goods or bills of lading. 'Take notice: William T. Harnden is alone responsible for the loss or injury of any articles committed to his care; nor is any risk assumed, nor can any be attached to the proprietors of the steamboats in which his crate may be, and is transported, in respect to it, or its contents, at any time.'"

The New Jersey Company also published the following notice:—

"Notice to shippers and consignees: All goods, freight, baggage, bank-bills specie, or any other kind of property taken, shipped, or put on board the steamers of the New Jersey Steam Navigation Company, must be at the risk of the owners of such goods, freight, baggage, &c.; and all freight, goods, wares, and merchandise, or any other property landed from the steamers, if not taken away from the wharf without delay, will be put under cover, at the risk of the owners of said goods, freight, baggage, &c., in all respects whatsoever."

Harnden was employed by the Merchants' Bank, to collect checks and drafts on the New York banks, and send the money to Boston. He collected $18,000, and put it into the crate, on board the Lexington, on the 13th of January, for the purpose of conveyance to the Merchants' Bank. That

evening, the vessel, with nearly all on board, was destroyed by fire, an event not soon to be forgotten by those who read the accounts at that time.

The bank libelled another steamer of the company for the $18,000.

The Court decided, 1st. That the suit was properly brought by the Bank, instead of Harnden, who was to be considered in law as the agent or servant of the owners, and the possession of the agent is the possession of the owner, though it would be otherwise in a court of law, if the contract was under seal.

2d. They remark—

"We lay out of the case, the notices published by the steamboat company, seeking to limit their responsibility, because—

1. The carrier cannot, in this way, exonerate himself from duties which the law has annexed to his employment; and, 2. The special agreement with Harnden is quite as comprehensive in restricting the obligation, as any of the published notices.

"A question has been made, whether it is competent for the carrier to restrict his obligation, even by special agreement. It was very fully considered, in the case of Gould and others *vs.* Hill and others, (2 Hill 623,) and the conclusion arrived at that he could not.

"As the extraordinary duties annexed to his employment concern only, in the particular instance, the parties to the transaction, involving simply rights of property, the safe custody and delivery of the goods, we are unable to perceive any well-founded objection to the restriction, or any stronger reasons forbidding it than exist in the case of any other insurer of goods, to which his obligation is analagous, and which depends altogether upon the contract between the parties.

"The owner, by entering into the contract, virtually agrees that, in respect to the particular transaction, the carrier is not to be regarded as in the exercise of his public employment; but as a private person, who incurs no responsibility beyond that of an ordinary bailee for hire, and answerable only for misconduct or negligence. The right thus to restrict the obligation is admitted in a large class of cases founded on bills of lading and charter parties, where the exception to the common law liability (other than that of inevitable accident) has been, from time to time, enlarged, and the risk diminished, by the express stipulation of the parties. The right of the carrier thus to limit his liability in the shipment of goods, has, we think, never been doubted. But admitting this right, it by no means follows that he can do so by any act of his own. He is in the exercise of a sort of public office, and has public duties to perform, from which he should not be permitted to exonerate himself, without the assent of the parties concerned. And this is not to be implied from a general notice to the public, limiting the obligations which may or may not be assented to. He is bound to receive and carry all the goods offered for transportation, subject to all the responsibilities incident to his employment, and is liable to an action in case of refusal. And we agree with the court in the case of Hollister *vs.* Nowlen, that, if any implication is to be indulged from the delivery of the goods under the general notice, it is as strong that the owner intended to insist on his rights, and the duties of the carrier, as it is that he assented to their qualification. The burden of proof lies on the carrier, and nothing short of an express stipulation by parol, or in writing, should be permitted to discharge him from duties which the law has annexed to his employment.

"The special agreement, in this case, under which the goods were shipped, provided that they should be conveyed at the risk of Harnden; and that the respondents were not to be accountable to him or to his employers, in any event, for loss or damage. We think it would be going farther than the intent of the parties, upon any fair and reasonable construction of the agreement, were we to regard it as stipulating for willful misconduct, gross negligence, or want of ordinary care, either in the sea-worthiness of the vessel, her proper equipments and furniture, or in her management by the master and hands."

* * * * * * *

"The respondents having succeeded in restricting their liability as carriers by the special agreement, the burden of proving that the loss was occasioned by the want of due care, or by gross negligence, lies on the libellants, which would be otherwise, in the absence of any such restriction."

After an examination of the evidence, the court came to the conclusion that there was great want of care, amounting to gross negligence, and that the respondents were therefore liable for the loss of the specie, notwithstanding the special agreement.

We have given thus much of this case, which has been reported at great length, because it must be considered as an important authority hereafter.

"In Newbern *vs.* Just it was affirmed by Bart, Chief Justice, that it had been decided over and over again, that notice does not protect a carrier against negligence. A notice, therefore, applies only to the responsibility of the carrier as an insurer, and does not exempt him from the consequences of his own negligence, or from the negligence of his servants and agents. Neither by public notice, seen and read by his employer, nor even by special agreement, can the carrier exonerate himself from the consequences of gross neglect."

"What constitutes gross neglect or gross negligence, and whether there is any real distinction between negligence and gross negligence, has been a matter of judicial doubt; but the question has been considered as settled by the case of Wyld *vs.* Richford, in which Mr. Baron Parke says—'The weight of authority seems to be in favor of the doctrine, that, in order to render a carrier liable after notice, it is not necessary to prove an abandonment of that character, or an act of willful misconduct, but that it is enough to prove an act of ordinary negligence.'"

If the want of fair dealing, by an improper concealment of the nature and value of the goods, has been the cause of negligence in the carrier, of which he would otherwise have not been guilty, the person sending the goods cannot complain of the consequences of his own act. If the owner adopts a disguise for his box, which is calculated to prevent the carrier from taking the particular care of it which the real nature and value of its contents demand, he cannot recover in case of loss, even in the case of gross negligence, beyond the value of the box itself. In the case of the Orange County Bank *vs.* Brown, a traveler's trunk contained $11,250, and the plaintiff sought to recover it, as a part of the *baggage* lost. It was held that this did not fall within the commonly received import of the term "baggage," and that an attempt to have it carried free of reward, under that name, was an imposition upon the carrier; that he was thereby deprived of his just compensation, besides being subjected to unknown hazards.

If a carrier takes the goods beyond the place of destination, and they are lost, or deliver them to the wrong person, or sends them by a different conveyance from that implied in the undertaking, or in a different manner, and they are lost, he is liable for the misfeasance, although otherwise he would be exonerated by the terms of the notice.

Without adverting to the many other questions which arise in connection with notices, we shall give Mr. Angell's summary of the evidence of notice, it being remembered that the only notice which a carrier can give, is one which limits, without entirely exempting him from responsibility; as, for instance, that he will not be responsible for goods above the value of a certain sum, unless they are entered as such, and paid for accordingly.

"In all cases where the notice cannot be brought home to the person interested in the goods, directly or constructively, it is a mere nullity; and the burden of

proof is on the carrier to show that the person with whom he deals is fully informed of the terms and effect of the notice. When the notice is thus brought home, in the absence of all contravening circumstances, it is deemed proof of the contract between the parties; and is then to be construed like every other written contract; and so far as the exceptions extend, they convert the general law into a qualified responsibility. The most usual evidence to show that the plaintiff has had notice of the defendant's terms, has been by proof that a notice was *put up in the office* where the goods were received and entered for the purpose of carriage, in so conspicuous a situation, that it must, (unless he were guilty of willful negligence,) have attracted the attention of the plaintiff, or his agent; and the printed conditions of a line of public coaches were held to be made sufficiently known to passengers, by being held up at the place where they book their names. But this proof fails where the party who delivers the goods at the office cannot read; and where the goods were delivered by a porter who admitted that he had frequently been at the defendant's office, and that he had seen a printed board, but did not suppose it contained anything material, and, in fact, had never read it, it was held that, although the board, in fact, contained a notice, the evidence of notice was insufficient.

"Another usual proof of notice, is by evidence, that the notice was given by *printed cards*, or by *advertisements in the public newspapers;* but this is insufficient, unless it be proved that the plaintiff has seen such cards or read the newspapers, or is accustomed to read the newspapers, so as to lay a foundation for presuming knowledge. If the carrier relies on the distribution of printed handbills, he must show that one of them was actually delivered to the owner, or to the person bringing the goods for conveyance."

The following rule, from an English case, seems to have received the full approbation of the Supreme Court of New York, in the case of Hollister *vs.* Nowlen :—

"If coach proprietors wish honestly to limit their responsibility, they ought to announce their terms to every individual who applies at their office, and, at the same time, place in his hands a printed paper, specifying the precise extent of their engagement. If they omit to do this, they attract customers, under the confidence inspired by the extensive liability which the common law imposes upon carriers, and then endeavor to elude that liability by some limitation which they have not been at the pains to make known to the individual who has trusted them."

The remark of Judge Brownson, in the New York case, is as follows :—

"Fraud cannot, I think, be imputed to the owner, from the mere fact that he delivers goods after having seen a general notice published by the carrier, whatever may be its purport. If the carrier wishes to ascertain the extent of his risk, he should inquire at the time the goods are delivered; and then, if he is not answered truly, he will have a defense."—See 4 Bing., 218.

It is not easy to make any general rule on the subject, from the cases cited in Mr. Angell's work. As carriers have, in general, adopted each a peculiar form of notice, the cases have been decided in reference only to, and upon a construction of, such particular notices, and a number of cases are cited in different parts of the book, which differ upon very nice grounds of distinction, if any.

"In one case, where the terms of the contract were, that 'cash, plate, jewels, &c., would not be accounted for, if lost, of more than £5 value, unless entered as such, and paid for,' the carrier was not held liable for any loss whatever, in case the goods exceeded the specified value, and no entry or payment of the increased value had been made. In another case, where the terms of the notice were, that 'no more than £5 will be accounted for for any goods or parcels delivered at this office, unless entered as such, and paid for accordingly,' the plain-

tiff was allowed to retain his verdict for £5, as a limited amount of damages re-recoverable by him, under the conditions of this contract."

The uncertainty in which this subject was involved, led to the passage, in England, of the act, entitled "An act for the more effectual protection of mail contractors, stage-coach proprietors, and other common carriers for hire, against the loss of, or injury to, parcels or packages delivered to them for conveyance or custody, the value or contents of which shall not be declared to them by the owners thereof." This act is referred to, and highly commended, by Chief Justice Bronson, in the case of Hollister *vs.* Nowlen, who thus briefly sums up its provisions:—

"The act enumerates various articles of great value, in proportion to the bulk, and others which are particularly exposed to damage and transportation, and declares that the carrier shall not be liable for the loss or injury of those articles, when the value exceeds £10, unless, at the time of delivery, the owner shall declare the nature and value of the property, and pay the increased charge which the carrier is allowed to make for his risk and care. If the owner complies with this requirement, the carrier must give his receipt for the goods, acknowledge the same to his being insured, and if he refuse to give the receipt, he remains liable and responsible at the common law. The provision extends to the proprietors of stage coaches, as well as all other carriers, and to property which may accompany the person of any passenger, as well as other goods; and the statute declares, that after the first day of September, 1830, no public notice or declaration heretofore made, or hereafter to be made, shall be deemed, or construed to limit, or in anywise effect the liability, at common law, of any carriers, but that all, and every such carrier shall be liable, as at the common law, to answer for the loss or injury of the property, any public notice or declaration by the mmade and given contrary thereto, or in anywise limiting such liability, notwithstanding. The only modification of the common law rule in relation to carriers, made by this statute, is that which requires the owner, without a special request, to disclose the nature and value of the package, when it contains articles of a particular description, the premium for care and risk the carrier might have required before. In relation to all articles not enumerated, and in relation to those, also, if the owner comply with the requirement of the act, the carrier is declared liable as an insurer, and must answer, as at the common law. The whole doctrine which has sprung up under notices, is cut up by the roots, and in such language as renders it apparent that the Legislature deems it an innovation on the law of the land."

We have confined our notice almost exclusively to the chapter on the "Limitation of Responsibility by Notices," because it is a matter of constant inquiry. We do not perceive that Mr. Angell's book presents any new principles, as having been established within the last ten years, although enumerating a number of important cases; but it is worthy of inquiry, to those who read his work, whether some enactment similar to the English statute, would not be desirable in our own country; and if our extracts on this point will only turn the attention of merchants, as well as lawyers, to the subject, they will not have been made in vain. The chapters on "Delivery," "Rights of Possession, Of Lien, and of Action for Freight," and on the pleadings and conduct of actions, are very full and complete, in citations from the latest English and American cases. There seems to be a want of conciseness, and a repetition, which has, perhaps, swelled the work to a larger size than was necessary.

We extract the following account of the distinction between common carriers of passengers, and common carriers of goods, a subject of more interest, since the passage in New York of the act to provide compensation for death caused by neglect or malfeasance.

"The carriage of persons as passengers, for hire, in public conveyances, is comparatively of modern practice; and although suits occurred against owners of coaches, for the loss of goods, as early as the time of Lord Holt, yet the first case, it seems, to recover damages by a person for injury done to him as a passenger, was tried in 1791, before Lord Kenyon. The case referred to was White *vs.* Boulton, in which that learned judge, in delivering his opinion, said, "When these [mail] coaches carried passengers, the proprietors of them were bound to carry safely and properly." "To carry safely and properly," "or safely and securely," is the obligation which the law imposes upon a special carrier of goods for hire, or a common carrier of goods for hire, who is not a common carrier of goods. Common carriers of passengers, therefore, are subject to the same degree of liability as private carriers for hire, of goods, which is a liability for all consequences resulting from the want of such care as the thing, or person, under the circumstances of the case, requires. But this undertaking, whether as implied by law, or as created by an express promise, does not insure against the forcible attacks of robbers; and herein appears the difference, in respect to liability, between common carriers of passengers, and common carriers of goods. The latter, as we have seen, are responsible for all damages which do not fall within the excepted cases of the act of God and the public enemy. The policy of the law which imposes this extraordinary responsibility, it is obvious, is not applicable to the persons of passengers, although it is properly held to apply to the baggage they have with them. It is to give security to property against clandestine combination with thieves, &c.; and as the law holds a common carrier of goods to be an insurer, he is entitled, like other insurers, to demand a premium in proportion to the hazards of this employment. In the words of Chief Justice Parker, of New Hampshire, "Carriers of passengers for hire, are not responsible in all particulars, like common carriers of goods. They are not insurers of personal safety against all contingencies except those arising from the acts of God and the public enemy. For an injury happening to the person of a passenger, by mere accident, without fault on their part, they are not responsible, but are liable only for want of due care, diligence, or skill. This results from the different nature of the case; but in relation to the baggage of their passengers, the better opinion seems to be, that they are responsible, like other common crrriers of goods."

After citing a number of cases in which stage-coach proprietors have been mulcted in heavy damages, in consequence of want of proper precaution, and furious driving, the author remarks:—

"It of course follows that driving so rapidly over a railroad by the servants of the company, as to amount to rashness, is equally inexcusable; and the fact of rashness will depend much on the condition of the road. What would not be an improper rate of speed over one portion of the rails, might be in another; as, for instance, where the rails are sprung, the sleepers broken, or the bridges not roadworthy. Evidence may unquestionably be given, that an injury was received by a passenger, in consequence of the improper speed with which the cars on a railroad were drawn over a spot which presents the obstructions and defects like those just mentioned." P. 515, and cases cited.

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"As a steam vessel has greater power, and is more under command, she is bound always to give way to a sailing vessel."

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"We conclude the perplexed subject of liability for damage done by collision of vessels, by warning ship-owners that it is important for them to bear in mind, that, in case of collision, they will not be absolved from the duty of rendering every assistance in their power to the ship which has been in error, for the safety of her cargo, and her passengers. It is held, indeed, to be a suspicious circumstance; and the owners of the *Celt*, though not otherwise in fault, were condemned in all costs and expenses of the suits, because the master made no attempt to save the ship run down." P. 647.

In an appendix of some 86 pages, are given at length some of the most recent decisions in England and America, detached portions of which are cited in the text; also all the laws enacted by Congress to provide for the better security of passengers in steam vessels.

Mr. Angell is already well known to the legal profession by his works on "Water Courses, "Tide-waters," "Adverse Engagement," "Limitations," "Corporations," &c.

Since writing the foregoing, we have observed that recently, in the District Court sitting at Philadelphia, a decision was rendered in the case of Baldauff *vs.* the Camden and Amboy Railroad Company, under the following circumstances:—

The action was brought to recover damages for the contents of a passenger's trunk, which was placed in the usual baggage car, and which contained money. The plaintiff, it appears, paid for extra freight, but failed to inform the company's agent that there was money in the trunk. The question was, whether the plaintiff could recover for the money lost. The defendants proved the usual newspaper notice, limiting their responsibility for the baggage, which the court disregarded, it not being shown that the plaintiff knew of the notice, or had seen it. They also relied upon the notice on the passenger's ticket, which the court said applied only to cases of loss from accident. The defendant's counsel argued that although they would be liable for the ordinary contents of a trunk, they could not be made responsible for unusual and valuable articles, such as money, jewels, &c., unless they had notice, and it was proved that such notice had not been given. The court gave judgment for the plaintiff, on the ground that the *charging and receiving extra freight for the baggage* was sufficient evidence of the defendants' knowledge of the contents of the trunk.

MERCANTILE LAW CASES.

SEQUESTRATION OF MERCHANDISE—VENDOR'S PRIVILEGE.

Where A. sold certain goods for cash to B., who received them, and shipped them on a vessel commanded by C., who gave the usual bill of lading for them, consigned to D. in Philadelphia, and B. dispatched the bill of lading by mail to D., and A. then sequestered the goods on ship-board, within five days after the sale to B. *held*, that C. had no right to rely on the naked fact that he had signed and issued a bill of lading, and that A. having established his claim as vendor, the bad faith of his vendee, B., and a clear right to the vendor's privilege, if his interest had not been divested in favor of D., for value given *bona fide* D., in a contest with A., would have been driven to show the nature and circumstances of his interest, and that C., in thus undertaking D's. case, can stand in no better position. An affidavit for a sequestration, under the act of March 20, 1839, sec. 6, that does not contain the words "during the pendency of the suit," or some equivalent expressions, is bad, and the sequestration will not be sustained.

In the Supreme Court of Louisiana, (New Orleans, May 14, 1849.) Wilson & Gleason *vs.* Samuel Churchman, G. Gilchrist, Intervenor. Appeal from the Fourth District Court of N. Orleans, SLIDELL, J.

On the 5th January, 1848, plaintiffs made a cash sale to Churchman of a quantity of flour, which was delivered. Churchman shipped it on board a vessal commanded by Gilchrist, bound to Philadelphia. Churchman received, as shipper, a bill of lading, in the usual form for the delivery of the cargo in Philadelphia to Fleming or his assigns. After this bill of lading was despatched by mail to Philadelphia to the consignee, plaintiff commenced suit against Churchman, and seized the flour on ship board at New Orleans, under a writ of sequestration, and a claim of the vendor's privilege. The sequestration was levied on the 10th of January, and on the 11th, Gilchrist, as agent of the ship-owners, gave bond for the prop-

erty, and was reinstated in its possession. On the 27th of January, Gilchrist filed a petition, by way of third opposition, in which he alleges himself to be master and part owner of the vessel. He states that the bill of lading had been given before the sequestration, and had been forwarded to the consignee; that plaintiffs had made no offer to return the bill of lading; that he is bound to deliver the flour at Philadelphia to the consignee, or whoever may be the holder of the bill, and is entitled to the possession and custody of the property in preference to plaintiffs.

The case came on to trial, as between plaintiffs and the third opponent, on the 28th of February, 1848. No application was made for a continuance. The execution of the bill of lading, and its being mailed to Fleming's address before the levy of the sequestration, were proved. Plaintiffs proved the sale of the flour, Churchman's failure to pay, and that he was in failing circumstances.

The decision of the Supreme Court is long and elaborate, and our limits compel us to condense it.

The Court observed:—If the Philadelphia consignee was neither a *bona fide* purchaser nor advancer, but was the mere agent of the consignor who had attempted to defraud his vendors, the consignee would have no greater right to defeat the vendor's privilege, than the vendee himself would have had. The vendors took the risk of the consignee being neither a *bona fide* purchaser nor advancer, and caused the goods to be sequestered. The allegations of the petition gave the captain full notice that the plaintiffs had been defrauded, and the judicial process would have excused the captain to the consignee for not delivering the goods, provided he gave the consignee prompt notice of the sequestration, and, in the meantime, took such conservative steps in the cause as would arrest the action of the court, until the consignee could come in and assert his rights. Unquestionably the court would have given time for that purpose, upon a proper application, and would also have indemnified the captain, at the plaintiff's expense, for his trouble and loss in unlading the goods, &c. * * * The captain has not shown that he has delivered the goods at all to the consignee. *Non constat* that they are not still in his possession. At any rate, if he has delivered the goods to the consignee, he has not offered any evidence whatever to show that the consignee was rightfully entitled to receive them as against the plaintiffs. Under these circumstances, we think that the case is with the plaintiffs, and that the captain has no right to rely upon the naked fact that he has signed and issued a bill of lading. * * * The plaintiffs having established their claim as vendors, the bad faith of the vendee, and a clear right to the vendor's privilege, if Churchman's interest had not been divested in favor of Fleming for value given *bona fide*. Fleming, in a contest with the plaintiffs, would have been driven to show the nature and circumstances of his interest. By what right can the captain undertake Fleming's case, and claim to stand in a better position? His argument for withholding the goods from the plaintiff is, that he has signed a written promise to deliver them to Fleming; but if Fleming was in bad faith, or was a mere agent, he could not have succeeded in doing what the captain insists upon doing for him.

It is very true that the right of stopping *in transitu* under the law merchant, which bears, in some respects, a strong analogy to the exercise of the vendor's privilege under our code, is defeated by the negotiation of the bill of lading. But this rule must be understood with this qualification; that the transferee has received it in good faith, and for value. Licklanow *vs.* Mason, Smith's Leading Cases, 507; Cumming *vs.* Brown, 9 East., 514; *in re* Wisby 5 B. & Al. 817; 3 Kent's Com., 216; Abbott on Ship, 514 *et seq*; Eden on Bankruptcy, [313,] *et seq.*

The court below gave judgment, dismissing Gilchrist's opposition, and a motion was made by him for a new trial, which he accompanied by affidavit that he arrived at the port of New Orleans, on his return from Philadelphia, a few hours after the trial of the cause; that he could prove by a witness at Philadelphia, that he had delivered the flour to Fleming, who had received the bill of lading in due course of mail, and accepted bills to the amount of $3,000; that he had not discovered the materiality of this testimony until after his arrival here, and had no

representative here who knew the facts The affidavit referred to a cirtificate by the proposed witness, who states that he was in the employ of Fleming; that the letter enclosing the bill of lading was received in due course of mail, and that Fleming accepted drafts for $3,000 against the shipment. The new trial was refused. The Supreme Court coincided with the lower Court on the judgment refusing a new trial, on the ground that there was a want of diligence.

The refusal of the District Court to set aside the sequestration, was next considered. The affidavit was in the usual form, except that affiant swore that Churchman was indebted to plaintiffs "in about the sum of $4,950," "for about nine hundred barrels of flour, &c.," concluding by, "as deponent verily believes, said Churchman will dispose of the same, or send it out of the jurisdiction of the court." It will be observed that the words "during the pendency of the suit," required by the act of 1839, amending the Code of Practice, are omitted in this affidavit. The affidavit was said to be insufficient, Sellick *vs.* Kelly, 11 Rob. 149, the danger that the property would be removed before the party could have the benefit of his privilege, not appearing therefrom. The affidavit does not say *when* Churchman will dispose of the property, or send it out of the jurisdiction of the court. It would be consistent with truth, even if at the time the plaintiffs were convinced that the property would not be disposed of, or sent away before a judgment could be obtained and a *fi. fa.* issued. Nor is this uncertainty cured, but, on the contrary, it is increased, by considering the context of the affidavit. *Non constat* that the price was due, or even if due, that it had ever been demanded. The whole showing was held to be loose and uncertain. The Supreme Court observed that the expressions, "during the pendency of the suit," may not be sacramental, but that the necessity of the conservatory process should substantially form the affidavit.

The judgment dismissing the third opposition of Gilchrist, was affirmed; the judgment on the rule to set aside the sequestration, was reversed, and the sequestration set aside; the costs of the sequestration, and of the rule, and of this appeal, to be paid by plaintiff; the case was remanded for the sole purpose of ascertaining the value of the flour sequestered at the date of the bonding thereof by said Gilchrist, and of rendering judgment for such value in favor of plaintiffs against said Gilchrist, with interest from the date of such bonding and costs subject to credit for such portion of the price of said flour as the plaintiffs may have received from Churchman.

LIABILITY OF COMMISSION MERCHANTS.

Where a commission merchant sells goods for another for cash, and does not use due diligence to collect the debt, and the vendee afterwards fails and absconds, he will be held liable for the amount of goods sold.

In the Supreme Court of Louisiana, Justice Rost presiding. Montgomery & Ryan *vs.* Wood & Simmons.

This action was brought to recover the proceeds of a sale of goods on plaintiffs' account by the defendants, who are commission merchants. The defendants received the goods shipped to them by the plaintiffs, and sold them for cash to Bernard Donlin, a person alleged to have been in fair credit at the time, and delivered them without receiving or demanding the money. Six or seven weeks after the delivery, Donlin absconded, leaving the debt unpaid, and the defendants now deny their liability, on the ground that the sale was made for cash, in *pursuance of instructions*, without guaranty on their part, and in the usual course of trade, to a person in fair credit at the time. They acted with caution and prudence, and used due diligence to collect the debt. The defendants obtained judgment, and plaintiff's have appealed.

Rost, Justice.—It is in evidence that it is the universal usage in this city, in sales for cash, to deliver the goods, and to call for the money, two, or three, or four days, or more, after the delivery. And that when a merchant sells for cash, without charging the guaranty commission, he is not considered liable for the sale. Admitting this to be binding, we are of opinion the defendants have failed to show due diligence. It is proved by Ludwigsen, the former clerk of defen-

dants, that he presented the bill on the afternoon of the day of sale, and called from day to day afterwards, for several successive days, and Donlin having put him off by saying he was short of money, and would pay in a few days. The money was never collected, and six weeks afterwards, Donlin failed and absconded. The defendants should have made inquiry of Donlin's circumstances, from his suspicious conduct. Had they have made diligent inquiry, they would have ascertained that before he absconded; two of the sheriffs had writs against him, and were executing them, and by prompt action they might have recovered the goods, or secured the price. Judgment is therefore reversed, and rendered in favor of plaintiffs for $317 50, with interest and costs.

LAW OF PATENTS.

In the Court of Common Pleas, (England,) an action was recently brought by the assignee of the patent for taking daguerreotype likenesses, against the defendant for an infringment of the patent, which had been assigned to the plaintiff by one Miles Berry. The defendant pleaded a great number of pleas, the material plea being that the specification was bad, and that by following its directions, the plates, which were to be silvered over, and prepared in a particular way, to receive impressions, would be useless. Evidence to this effect was given, and it was contended that the objection was fatal. The learned judge who tried the case thought the objection was fatal, and the jury were directed to find for the defendant, leave being reserved to the plaintiff to move to enter the verdict for him, if that direction should be wrong. The court had now come to the conclusion that the objection then made could not be sustained. In the construction of a patent, the court was bound so to read a specification as to support it, if it could be supported. Russel *vs.* Cowley, 1 Cr. M. and R., 864, Neilson *vs.* Harford, 8 M. and W., 806, M'Alpin *vs.* Albin, 3 C. B., 518. Applying that principle of construction to the specification before them, it seemed to the court to be free from any obscurity calculated to mislead any person of fair intention, and that the obscurity was cleared away by a fair consideration of the whole specification. The rule, therefore, to enter the verdict in favor of the plaintiff must be made absolute. Rule absolute.

INSURANCE—DAMAGE TO GOODS FROM DAMPNESS.

In the Supreme Judicial Court, (Boston, Massachusetts,) Chief Justice Shaw on the bench. Eliphalet Baker *vs.* Manufacturers Insurance Company.

This was an action on a policy of insurance on goods on board of the ship Moselle, from Havre to the United States. This vessel sprung a leak on the voyage, which was a long one, the passage being nearly three months, but no great injury was done to the hull. The plaintiff's goods, being principally silk goods, were considerably damaged. The question was raised—whether the damage was caused by the perils insured against? At the trial, before Judge Wilde, the jury were instructed that the plaintiff was not insured against any but extraordinary perils of the sea, and not against dampness naturally occasioned by the length of the voyage. The jury were instructed, first, to find the amount of the damage occasioned to the goods by being wet with salt water; and second, the amount of the damage occasioned by any other cause. The damage caused by salt water, must, as a general rule, and in the absence of evidence to the contrary, have been occasioned by stress of weather, and by the perils insured against. The plaintiff must show affirmatively the loss was occasioned by the perils insured against. If the goods were liable, from their nature, to be damaged by the dampness of the hold, such damage, in the absence of other evidence to that effect, was *not* caused by the perils of the sea; and the burden of proof was on the plaintiff, to show that it was caused by such perils. The evidence was reported at length, and it was left to the full court to say for which sum the verdict should be entered.

Chief Justice Shaw delivered the opinion of the court. The court were all satisfied that the verdict should be taken for the amount of the damage caused to the goods by their being wet with salt water, and that all other damage being left uncertain by the evidence, must be excluded. Judgment accordingly.

COMMERCIAL CHRONICLE AND REVIEW.

IMPROVEMENT IN THE VALUE OF REAL ESTATE NOTWITHSTANDING THE PREVALENCE OF THE CHOLERA —ACCUMULATION OF MONEY—PRICES OF NEW ORLEANS COTTON IN NEW YORK IN 1848-9—IMPROVED PRICES—COINAGE OF THE UNITED STATES MINT—CALIFORNIA GOLD—ITS EFFECT ON THE MONEY MARKET—CONDITION OF THE BANKS OF NEW YORK AT DIFFERENT PERIODS—NEW YORK CITY BANKS —BROADWAY BANK—BANK DIVIDENDS—ACCUMULATION OF COIN IN THE BANK OF ENGLAND—CONSUMPTION OF WHEAT AND FLOUR—BANK OF ENGLAND LOANS, DEPOSITS, ETC.

NOTWITHSTANDING the general dulness which the presence of an all pervading epidemic, has this year added to the usual quiet of the summer months, there has been, apparently, a steady and regular improvement in the value of real estate and raw produce. While money has accumulated in the great reservoirs, from an indisposition on the part of leading operators to enter into extensive enterprises at the present moment, capital has been gradually finding its way into a certain class of investments, and prices, in the phrase of the stock market, have been "hardening down." The causes which we pointed out in our last number, as likely to continue to promote an abundance of money beyond the period when in usual years it becomes more in demand for the larger operations which turn upon the great national products. These continue to point to the same result; as an instance of the progressive improvement in the value of the great southern staple, we have compiled the following table, showing the prices of New Orleans description, on the first and middle of each month:—

PRICES OF NEW ORLEANS COTTON IN NEW YORK FOR THE YEAR.

		Inferior.	Ordinary a good ordinary.	Middling a good middling.	Middling fair a fair.	Fully fair a good fair.
September	2.....	5 a 5 1/2	5 3/4 a 6	6 1/4 a 6 3/4	7 a 7 1/2	7 3/4 a 8 1/2
"	13.....	5 a 5 1/4	5 1/2 a 6	6 1/4 a 6 1/2	6 3/4 a 7 1/2	7 3/4 a 8 1/2
October	1.....	5 a 5 1/4	5 3/4 a 6	6 1/4 a 6 3/4	5 3/4 a 7 3/8	7 1/2 a 8 1/4
"	14.....	5 a 5 1/4	5 1/2 a 5 7/8	6 a 6 3/8	6 1/2 a 7	7 1/4 a 7 3/4
November	1.....	4 3/4 a 5	5 1/4 a 5 3/4	5 3/4 a 6 1/2	6 1/2 a 6 3/4	7 a 7 1/2
"	14.....	4 1/2 a 4 1/2	5 1/2 a 5 1/2	5 3/4 a 6	6 1/4 a 6 3/4	6 3/4 a 7 1/2
December	1.....	.. a 5	5 1/4 a 5 3/4	5 3/4 a 6 3/4	6 1/2 a 6 7/8	7 a 7 1/2
"	13.....	5 a 5 1/2	5 3/4 a 5 3/4	6 a 6 3/4	6 1/2 a 7	7 1/4 a 8
January	1.....	5 1/4 a 5 1/2	6 a 6 3/4	6 1/2 a 6 3/4	7 a 7 1/2	7 3/4 a 8 1/4
"	15.....	.. a ..	6 1/4 a 6 1/2	6 3/4 a 7	7 3/4 a 7 3/4	8 a 8 1/2
February	1.....	.. a ..	6 3/4 a 6 3/4	7 a 7 3/8	7 1/2 a 8	8 1/4 a 8 3/4
"	14.....	.. a ..	6 3/4 a 6 3/4	7 a 7 1/2	7 1/2 a 8 1/4	8 1/2 a 9
March	1.....	.. a ..	6 1/2 a 6 3/4	7 a 7 3/8	7 1/2 a 8 1/4	8 1/2 a 9
"	14.....	.. a ..	6 3/4 a 7	7 1/4 a 7 3/8	7 1/2 a 8	8 1/2 a 9
April	1.....	.. a ..	6 3/4 a 6 3/4	7 a 7 3/8	7 1/2 a 8	8 1/2 a 9
"	18.....	.. a ..	6 1/4 a 6 1/2	6 3/4 a 7 1/2	7 1/2 a 7 3/4	8 a 8 1/2
May	1.....	.. a ..	6 3/4 a 6 3/4	6 7/8 a 7 1/2	7 1/2 a 8	8 1/4 a 8 3/4
"	15.....	.. a ..	6 1/4 a 6 1/2	7 a 7 1/2	7 3/4 a 8 1/4	8 1/2 a 9
June	1.....	.. a ..	6 3/4 a 7 1/8	7 3/8 a 7 3/4	8 a 8 1/2	9 a 9 1/2
"	18.....	.. a ..	6 3/4 a 7	7 3/8 a 7 3/4	8 a 8 1/2	9 a 9 1/2
July	1.....	.. a ..	7 a 7 1/2	7 3/4 a 8 1/4	8 1/2 a 8 1/4	9 1/2 a 10
"	15.....	7 a 7 1/2	7 1/4 a 8 1/4	8 1/2 a 9	9 1/2 a 10	... a ...
August	1.....	7 1/2 a 8	8 3/8 a 8 3/4	9 1/4 a 9 3/4	10 a 10 1/2	10 3/4 a ...
"	8.....	8 a 8 1/4	8 3/4 a 9 1/4	9 1/2 a 10	10 1/2 a 11	11 a ...

It will be observed, that following the improved state of business which cheap food and cheap money never fail to create in the great manufacturing markets of the world, the price of the raw material has risen with the improved de-

mand, and the cotton year closes, in the face of a probably large crop, with a speculative demand, at prices nearly 50 per cent higher than those with which the year opened, and this advance has gone on to develope itself in the face of the largest crop ever before delivered. The consequent large production of goods has not over-supplied the market, but these are also improving in prices, under a fair demand. Wool has also improved in value under large deliveries. In fact, all the raw materials for textile fabrics have been in demand, and remunerating to the growers, while the rising rate of the goods has indicated the sound state of the markets of the world, recovering from the repeated shocks which famine and revolution have imparted to commercial and industrial pursuits in the last few years. The influence of the mineral wealth of California upon the finances of the country is no longer a problem. It has already become important, and the supply of gold from that region actually added to the currency of the Union, is considerable. The following official returns of the mint will show the operation:—

Gold coined during first and second quarters, 1849	$2,375,379 00
Silver " " " " 1849	598,590 00
Copper " " " " 1849	25,805 80
Total	$2,999,774 89

BULLION IN THE MINT.

Government deposits, June 30, 1849	$521,115 30
Individual " " 1849	807,972 57
Total	$1,329,087 87

The following will show the coinage of the gold dollars:—

California gold, up to July 31, about	$1,237,000 00
Other gold, " " "	427,539 00
Total	$1,764,539 00

More than one and a quarter million of dollars, of the California mineral, has been converted into the new dollar coin, which passed rapidly into circulation at a premium, caused by the novelty of its appearance. It is far from being a useful currency, however, and will, doubtless, be disused speedily altogether. Nearly $2,000,000 of gold of the new production reached the mint for currency purposes, and it is known that nearly $6,000,000 have been shipped from California, while the supply seems to become even more fully developed, and the means both of mining it regularly, and safely, and promptly transporting to American ports, better established. The quantities of goods and produce which were sent to the mining regions in hope of a large and profitable sale, seem to have far exceeded the demand of the miners, and must continue to do so until a population permanently local has been gradually established. By far the greater number of those who are more successful in mining are they who have gone well provided with supplies of all kinds, and with the intention only of extracting the gold, and bringing it home on their own account. It would seem, from recent accounts, that the surface gold has mostly disappeared, while the under-ground deposits, got at with much labor and hardship, well reward those who have the strength to endure and the means of operating. The prospect, is, therefore, that the supply of the precious metals from these regions, pouring into the United States in an-

nual abundance, will suffice to cause an accumulation of specie beyond what any probable effect of adverse exchanges may carry out of the country, and by so doing give a great support to the markets. The coming year affords, therefore, great promise of monetary abundance, inasmuch as that not only is the supply of the precious metals likely to be direct and large, but that considerable crops of raw produce promise lucrative sales, supported by the continued improvement in American credit, which further promotes the efflux of capital from Europe to America.

The leading features of the banks of New York State, give the following results, as compared with several former returns:—

BANKS OF THE STATE OF NEW YORK.

		Loans.	Specie.	Circulation.	Deposits.	Due banks.
June,	1848....	$73,497,137	$6,881,663	$20,088,077	$27,454,820	.....
September,	1848....	73,503,787	5,721,134	22,601,051	28,835,024	$4,165,416
December 9,	1848....	74,998,932	6,817,814	23,206,289	29,205,233	4,242,477
February 24,	1849....	76,824,565	5,481,874	22,509,982	30,816,287	4,439,085
June 30,	1849....	82,960,422	10,571,517	21,912,616	35,604,999	9,247,799

The increase of credits is very marked and considerable. The loans of the banks are nearly $9,000,000 greater than at the corresponding season last year. Their deposits are $8,00,000 greater, circulation $2,000,000, and bank balances $5,000,000, showing over $15,000,000 increase of means, which is invested in near $4,000,000 of specie. The large portion of the increase is in the last quarter, and the proportion borne by the city banks is as follows:—

NEW YORK CITY BANKS.

	Loans.	Specie.	Circulation.	Deposits.	Due banks.
February 24.....	$40,154,263	$4,523,775	$5,170,134	$22,928,554	$5,864,022
June 30.....	45,289,524	9,586,368	5,255,199	27,227,134	9,804,973
Increase.....	$5,135,261	$5,062,593	$86,065	$4,298,580	$3,940,951

The balances due banks out of the State, it would seem, are pretty large for the season of the year, and may be subject to call as the season advances. As there is, however, little probability of a foreign demand for specie, and the amount in bank is larger than it has been for many years, with the exception of the year of large importation, 1847, the internal demand will not be embarrassing, more particularly that payments for goods are about to mature. The disposition to increase bank capital continues very apparent, and during the month a new institution, called the Broadway Bank, with a capital of $300,000 has gone into operation in New York City, under the free banking law. While money has continued so cheap for so long a time, is, apparently, an inauspicious time for the multiplication of capital employed in loans; but it is nevertheless the case, that the dividends of the institutions payable in the summer months, have been exceedingly well sustained, arising probably from the fact, that although money has not been in demand for the prosecution of extended enterprises, the prevalence of the epidemic has greatly interfered with the prosperity of the retail trade generally, and by so doing has caused a pressure for money among that class of shopkeepers who failed to turn their stocks of goods into money.

It is to be remarked that while—as during the post-year, and the first six months of the present one—the importations of produce into England have been prodigiously large, and at the same time, by reason of the disturbed state of Eu-

rope the exports of British goods to the continent have been comparatively small, the accumulation of coin in the Bank of England, and the price of money in the London market, uniformly low. Thus for the four months ending with April, there was entered England, for consumption, from abroad, equal 2,200,700 qrs. of wheat and wheat flour. This was worth nearly £5,500,000, say $25,000,000, and many of the English periodicals wail over the fact as one pregnant with evil. It would seem, however, that this large quantity has been purchased at a low money price, and while the people at large have had such an immense addition made to their supply of food, the nation has been able easily to pay for it, and istill accumulate coin. The movement of the Bank of England, as indicated n its leading features, has for the past year been as follows:—

BANK OF ENGLAND.

	Loans.	Deposits.	Bullion.	Notes on hand.
August 5.....	£10,951,788	£9,968,628	£13,396,654	£7,998,200
September 2.....	11,368,314	8,824,607	13,509,662	8,784,795
October 7.....	11,539,164	8,053,104	13,417,241	8,053,104
November 4.....	10,805,561	10,795,395	13,347,553	8,242,565
" 25.....	10,754,444	9,932,550	14,139,846	9,986,110
January 6.....	10,825.470	8,814,702	15,024,802	10,985,050
February 3.....	10,314,654	11,328,544	15,105,764	7,553,460
March 17.....	10,638,064	9,855,826	15,278,779	9,855,826
April 26.....	10,047,336	11,815,217	14,509,888	8,691,680
May 26.....	9,837,316	9,755,000	14,397,166	9,030,935
June 23.....	9,721,867	9,336,927	15,188,063	10,437,420
July 14.....	9,685,433	11,468,268	14,767,923	8,473,415

During the year in which such large supplies of produce poured into England, it appears that the stock of bullion in the bank increased nearly £2,000,000, or over $9,000.000, and at the same time the specie in the New York banks also increased over $3,000,000, showing in the institutions of the two cities of London and New York an increase of $12,000,000, without any great increase in the outstanding credits.

It appears from the *Cincinnati Price Current*, that business in that region is improving, and, considering the low stage of water at that point, trade is better than usual, under simelar disadvantages, at this season of the year. We have still to report at Cincinnati the almost entire absence of country merchants. This, however, is no longer attributable to sickness in the city, but to the ravages of the epidemic in the country towns. Few places in the interior of Ohio, or adjoining States, have been exempt, and, in many of them, the mortality has been much greater, in proportion, than in Cincinnati. The malady, however, is rapidly passing away, and, in a very short time, the country towns will be as free from the epidemic as the cities which it has so severely scourged.

SHIP-BUILDING AT NEWBURYPORT.

Notwithstanding the dullness of the last year or two in the employment of shipping, says the Newburyport Herald, there seems to be a large amount of tonnage in process of construction. There are building in our Newburyport ship-yards, 6 large ships, none less than 500 tons, and from that to 1000, giving employment to from 250 to 300 men, These ships together will make about 4200 tons of first class vessels, which, at $60 per ton, completely rigged, will amount to nearly $250,000. About one-half of their tonnage is owned here, and the residue by merchants and others abroad. The citizens of Newburyport are also considerably interested in ship-building out of town.

COMMERCIAL STATISTICS.

TRADE AND REVENUE OF ENGLAND IN 1848 AND 1849.

[FROM THE LONDON ECONOMIST.]

The revenue accounts for the quarter and year ending the 5th instant, and the trade and navigation accounts for the five months ending the 5th ultimo, have just been published. The intimate connection which exists between these two documents renders the consideration of the one inseparable from the other, at least so far as the customs revenue is concerned. On the ordinary revenue of the year there is an increase of £668,551, and on the total income, including extraordinary sources, of £726,483. On the other hand there is a decrease on the ordinary revenue of the quarter of £493,850, and on the total income, including extraordinary sources, of £468,546. These simple statements, however, do not adequately convey a fair comparison of the two years, without a just consideration of the circumstances under which the surplus in the one case, and the deficiency in the other, have arisen. The comparison for the year and the quarter respectively is as follows, taking that for the year first:—

PRODUCE OF NET REVENUE IN THE YEARS ENDING JULY 5.

	1848.	1849.	Increase.	Decrease.
Customs	£17,888,988	£18,810,774	£921,786	.....
Excise	12,263,233	12,196,913	.....	£66,320
Stamps	6,449,108	6,103,408	.....	345,700
Taxes	4,306,703	4,339,500	32,797	.....
Property tax	5,411,253	5,362,083	.....	49,170
Post-office	787,000	849,000	62,000	.....
Crown lands	71,000	130,000	59,000	.....
Miscellaneous	150,406	204,564	54,158	.....
Total ordinary revenue	£47,327,691	£47,996,242	£1,129,741	£461,193
China money	455,021	84,284	.....	370,737
Imprest money	567,203	606,568	339,365	.....
Repayment of advances	422,485	511,789	89,304	.....
Total income	£48,472,100	£49,198,883	£1,558,410	£831,927
Deduct decrease			831,927	
Net increase			£726,483	

For the quarter, the comparison is as follows:—

PRODUCE OF NET REVENUE IN THE QUARTER ENDING JULY 5.

	1848.	1849.	Increase.	Decrease.
Customs	£4,447,832	£4,128,777	.....	£319,055
Excise	3,473,803	3,020,602	.....	453,201
Stamps	1,557,640	1,619,697	62,057	.....
Taxes	2,034,133	2,054,730	20,597	.....
Property tax	988,401	1,033,240	44,839	.....
Post office	136,000	196,000	60,000	.....
Crown lands	10,000	40,000	30,000	.....
Miscellaneous	9,227	70,140	60,913	.....
Total ordinary revenue	£12,657,036	£12,163,186	£278,406	£772,256
Imprest money	168,600	109,876	.....	58,724
Repayment of advances	86,813	170,841	84,028	.....
Total income	£12,912,449	£12,443,903	£362,434	£830,980
Deduct increase				362,434
Net decrease				£468,546

In the customs revenue, it will be seen that there is a surplus on the year of £921,786, and a deficiency on the quarter of £319,055. Both these results are attributable mainly to the corn duties. During the greater part of the first year, that is, up to the 1st of March, 1848, the corn duties, it will be remembered, were suspended; while the last year includes the receipts of large sums from the 5th of July, 1848, to the 1st of February in the present year, and even a considerable sum at the uniform duty of 1*s.* the quarter since February. It will also be borne in mind that the year ending July 5, 1848, was made up, first, of six months of severe commercial crises, and next, of the first six months of continental revolutions. On the other hand, it must be remembered that the year which expired the 5th July, 1848, included nine months of timber duties at the higher rate before the last reduction, which took effect on the 5th of April of that year, while, during the year just ended, those duties have been at the lowest rate for the whole period. With regard to the decrease on the quarter, of £319,055, this is also attributable chiefly to the difference of the corn duties. In the corresponding quarter of 1848, with which it is compared, there were cleared for consumption, at about the highest rates of duty, under the scale of 1846, 432,609 quarters of wheat, 104,000 cwts. of flour, 257,925 quarters of barley, 255,979 quarters of oats, 181,895 quarters of beans, besides other inferior grain, meal, &c.

Such is the condition of the income of the country as exhibited by these returns. The state of the public banking account is still more satisfactory. At the last quarter there were issued of deficiency bills $806,028—to complete the payments then due, which, of course, have been repaid out of the accruing revenue of the present quarter; by the accounts now before us, the amount of deficiency bills for the present quarter is only £464,958, against £806,028 in April, and £1,471,282 in the corresponding quarter of 1848.

But the most satisfactory part of these accounts is that which relates to the exports of our manufactures, which exhibit a steady increase upon last year, and which show that our commerce is rapidly recovering from the depression to which it was subject throughout 1848. Some are unwilling to admit that the convulsions on the continent had any effect on our trade, but it will be difficult to maintain that opinion, when the course of our exports in 1848 is stated month by month, when it will be seen that for the first *two* months, uninfluenced by the French revolution, there was an increase, that for the next *seven* months there was a large decrease, and that for the last three months, when confidence was partially restored, there was again an increase. The following is a statement of the monthly exports of the principal articles in 1848, compared with those of 1847:—

	1847.	1848.	Increase.	Decrease.
January	£3,077,910	£3,227,138	£149,228	.....
February	3,446,307	3,597,842	151,535	.....
March	4,820,900	4,240,317	.....	£580,583
April	4,812,852	3,345,735	.....	1,467,117
May	4,657,403	3,535,394	.....	1,122,009
June	4,578,871	3,625,513	.....	953,285
July	5,662,452	4,137,168	.....	925,284
August	4,853,103	4,313,722	.....	539,381
September	4,665,409	4,602,149	.....	63,260
October	3,397,454	3,428,448	30,994	.....
November	3,972,693	4,104,768	132,075	.....
December	3,660,444	4,249,745	589,301	.....
Total	£51,005,795	£46,407,939	£1,053,133	£5,650,992

Showing a difference in the two years of £4,597,859, the same result being arrived at by deducting the increase of the two first months, and of the last three months, from the large decrease of the seven months which immediately followed the French revolution. With such an analysis of the exports of 1848 before us, it is impossible to deny the striking effect which the continental convulsions had upon our trade.

In the first five months of the present year, the increase, however, is very large, compared with the same months of 1848, the comparison being—

Exports, January 5 to June 5, 1848	£18,944,644
" " " 1849	21,191,973
Increase	£2,247,329

This increase consists chiefly of the great leading articles of manufactures, cottons, linens, silks, and woolens. The comparison of the quantities of the chief articles under these heads is as follows:—

EXPORTED, JANUARY 5 TO JUNE 5.

	1848.	1849.
Cotton manufactures.....yards	411,111,915	530,644,887
Lace and net.....	24,185,909	41,024,715
Yarn.....lbs.	43,705,756	53,056,265
Linen manufactures.....yards	37,369,122	40,652,760
" yarn.....lbs.	4,110,449	6,790,928
Woolen manufactures.....yards	10,908,794	16,018,157
" " .....pieces	610,347	808,804
" yarn.....cwt.	22,955	30,488

And the increased money value of these four chief classes of our exports is as follows:

	1848.	1849.
Cotton manufactures and yarn.....	£8,716,401	£10,113,549
Linen manufactures and yarn.....	1,373,075	1,528,446
Silk manufactures.....	184,137	232,091
Woolen manufactures and yarn.....	2,274,096	2,695,077

When, in addition to these facts, we are able to refer our readers to a continued large and increasing supply of all the chief articles which constitute the raw materials of our manufacturing industry, we can conceive no better or more cheering evidences of the rapid improvement which is now visible in the country, and of promise of its continuance, affording to the agricultural classes the best security for their future and permanent welfare.

So far, therefore, as the increase of customs revenue on the year, or the decrease on the quarter, is concerned, they have no important connection with the general state of the commerce of the country. This will be more plainly seen if we compare the quantities of those articles which contribute most largely to the revenue, which were entered for consumption in the first five months of 1848, and of the present year, thus:—

DUTY PAID, JANUARY 5 TO JUNE 5.

	1848.	1849.
Coffee.....lbs.	16,169,878	15,262,922
Cocoa.....	1,342,700	1,447,636
Spirits—Rum.....galls.	1,189,785	1,257,298
" Brandy.....	610,972	684,161
" Geneva.....	9,865	11,859
Wine.....	2,605,932	2,694,066
Sugar—Raw .....cwt.	2,455,977	2,338,471
" Refined.....	9,579	29,339
Molasses.....	293,167	342,737
Tea.....lbs.	20,232,544	20,488,864
Timber—Colonial.....loads	172,218	126,465
" Foreign.....	267,456	214,569
Tobacco.....lbs.	11,194,037	11,431,665

These comprise all the articles in our customs tariff which now yield any important amount of revenue. With the exception of three, they all show an increase in the present year. The first of these is coffee, which shows a small reduction, attributable only to the daily increasing practice of adulteration, by the use of chicory, and many other less innocent materials. The next is sugar, the reduction of which, however, is only apparent, first, because a stock of about 12,000 tons of duty-paid sugar remained in the warehouses at the end of last year, in excess of the ordinary stock, from an accidental cause, and second, because the reduction of duty on the 5th instant to 12*s.* the cwt. on colonial sugar, and to 18*s.* 6*d.* the cwt. on brown clayed foreign sugar, induced dealers and refiners to work their stocks down to the lowest point prior to that day. The third, and most important of these articles, is timber. For the five months there is a reduction in the quantity of colonial timber, duty paid, of 45,753 loads, which, however, in a revenue point of view, is of little importance, as it pays only 1*s.* the

load. But of foreign timber, paying 15*s.* the load, the reduction is 52,887 loads, together making a reduction of 98,640 loads of timber entered for consumption in the present year, compared with the same period of 1848. This decrease, however, has arisen entirely from a great decrease in the quantity imported; for it appears, while 314,034 loads have paid duty, the entire quantity imported, including colonial and foreign, is only 156,287 loads, against 289,536 loads in 1848. This great decrease, so far as foreign timber is concerned, has been caused chiefly by the blockade of the Baltic ports.

It cannot fail to be interesting in this place to compare the quantity of grain which has been cleared for consumption in the present year, compared with the same period of 1848, when this article yielded a large revenue. The comparison is as follows:—

GRAIN, ETC., DUTY PAID, JANUARY 5 TO JUNE 5.

	1848.	1849.
Wheat.....qrs.	564,714	1,982,460
Flour.....cwt.	253,734	1,542,174
Grain of all kinds.....qrs.	1,579,396	5,037,291
Flour and meal of all kinds.....cwt.	394,228	2,032,754

And, converting the flour and meal into their equivalents of quarters of grain, the comparison of the two periods stands thus:—

	1848.	1849.
Total quantity of grain, duty paid.....qrs.	1,692,032	5,618,078

So that the average quantity of foreign grain which has been consumed in the present year, has been 1,123,615 quarters in each month.

Under the excise it will be seen that there is a deficiency on the year of £66,320, and on the quarter of £453,201. This, however, is apparent and not real, being caused entirely by a postponement of the hop duties, payable in the course of the last six months, until October next, and by the fact that the malting season has been somewhat later this year than last. The quantities of articles brought to charge, under the excise in the present year, and which will be payable in the course of the autumn, show a considerable increase upon those of last year; and, therefore, in place of a deficiency in the excise, there will be on the year a considerable increase.

Under the head of stamps it will be observed that there is a decrease on the year of £345,700, but an increase on the quarter of £62,057. The decrease on the year is no doubt attributable to the depressed state of trade during 1848, the great reduction in the number of transfers of railway shares, and the practice of evading the stamp duty on those transactions; the increase on the last quarter is one among the many evidences which are now seen of the improving condition of trade. Under all the other heads of ordinary revenue there is an increase on the last quarter, and with every prospect of a steady progress in that direction.

STATISTICS OF THE SLAVE TRADE.

It is impossible to arrive with accuracy at the number of slaves imported from Africa since Great Britain, under the influence of humane and Christian feeling, was led to abolish it throughout her dominions. A tabular statement, however, drawn up with great care, was laid before a Select Committee of the House of Commons, appointed last year to consider the best means for providing for the final extinction of the slave-trade, from which we gather the following particulars, viz., that from 1807 to 1819, no less than 2,290,000 negroes were exported from Africa; of these 680,000 were taken to Brazil, 615,000 to the Spanish colonies, and 562,000 to other countries. The casualties of the middle passage are stated to have amounted to the frightful sum 433,000! From the year 1819, when the cruising system was first put in operation against foreign slave-traders, to 1847, the number of negroes exported from Africa amounted to 2,758,506, which are thus distributed:—Brazil, 1,121,800; Spanish colonies, 831,027; deaths on the middle passage, 688,299; and captured by British cruisers, 117,380. According to this table, the total number of Africans imported into Brazil, during the last forty years, has been 1,801,800; into the Spanish colonies, 1,446,027; into other countries, 562,000; mortality during the middle passage, 1,121,299; and captured by British cruisers, since the year 1819, 117,380; making a grand total of 5,048,506, as the victims of the foreign African slave-trade, from 1807 to 1847!

PRICES OF AGRICULTURAL PRODUCTS IN OHIO.

The recent report of the Ohio State Board of Agriculture enables us to ascertain very nearly the prices of staple products where raised. The following are the prices of corn, wheat, oats, and hay in ten counties of southern Ohio:—

	Corn. *Cents.*	Wheat. *Cents.*	Oats. *Cents.*	Hay.
Preble	20	70	30	$5 00
Montgomery	25	70	20	8 00
Warren	27	70	25	6 00
Greene	25	65	18	4 00
Fayette	20	75	25	3 00
Highland	25	70	22	....
Ross	20	75	21	7 00
Gallia	25	65	20	4 00
Lawrence	25	70	20	7 00
Pickaway	27	75	20	....
Average	24	70½	22	$5 50

Taking the average product of good land, this gives the value of an acre of corn at $14 40; of an acre of wheat at $12 00; an acre of oats at $9 00; and an acre of hay at $11 00, in southern Ohio.

The following are the prices in ten of the central counties:—

	Corn. *Cents.*	Wheat. *Cents.*	Oats. *Cents.*	Hay.
Delaware	20	75	14	$4 00
Franklin	22	75	20	5 50
Guernsey	25	82	20	4 00
Harrison	25	70	20	4 00
Jefferson	31	75	22	4 00
Licking	20	80	14	5 00
Muskingum	25	71	20	....
Richland	31	85	..	4 00
Seneca	35	80	20	5 00
Stork	28	88	20	4 50
Average	26	79	19	4 50

This table shows that in these counties the price of corn is 2 cents, and of wheat 9 cents more than in the ten counties below, while oats is 3 cents per bushel, and hay $1 per ton less than in those counties. This is caused by the relative proximity of the northern and southern markets. Let us now take ten counties in the north of Ohio to compare by:—

	Corn. *Cents.*	Wheat.	Oats. *Cents.*	Hay.
Ashtabula	40	$1 00	20	....
Erie	44	95	20	$4 00
Geauga	35	1 00	25	5 00
Lake	20	1 00	25	5 00
Lorain	37	1 00	20	4 00
Mohoning	29	94	20	4 00
Summit	33	85	20	....
Trumbul	31	1 00	20	4 00
Wood	31	81	25	6 00
Defiance	35	85	20	5 00
Average	33	94	22	$4 62

The comparison of the three sections of the State gives this general result:—

	South.	Middle.	North.
Corn	24	26	33
Wheat	70	79	94
Oats	22	10	22
Hay	$5 50	$4 50	$4 62

If we combine these results with the natural adaptation of the soils in these several counties, we shall arrive at the *commercial reason* why the different parts of the State are remarkable for different staples. Thus, the southern part of Ohio—the alluvial bottoms of the Great and Little Miamies—the Scioto, Paint Creek, Deer Creek, and Derby—are peculiarly adapted to Indian corn. We find, therefore, that it is there cheap, on account of its great abundance. Because it is cheap, and that the Atlantic ports are at a great distance, corn (maize) is there consumed in the fattening of animals. The result of this mode of culture is more profitable than that of wheat, which is raised nearer the Atlantic market, and commands a better price. For the low price of corn on the Miamies and the Scioto is more than compensated by its adaptation to animals, and the relatively higher price of animal food (cattle and hogs) in the Atlantic and European markets. Corn, then, which, in proportion to the cost of its production, is the lowest priced article among the above staples, is really the most profitable to the cultivator.

In the middle of the State we find the rolling lands less adapted to corn, but its soil and climate well fitted for wheat. They are, also, nearer the Atlantic markets, and wheat, as we see above, commands about ten cents a bushel more than in the southern counties. The result is what we see—that middle Ohio raises more wheat than any section of the Union.

In the northern, or lake part of the State, the soil is not well adapted to either wheat or corn; but the rolling hills of the Western Reserve are admirably adapted to grazing. But, as cattle cannot be fatted well without corn, the agriculture of that part of the State turns almost entirely on dairies and sheep.

By a review of the above facts, we learn some important commercial truths.

1. The relative prices of different staple articles does not depend on the final price in the market; but it depends, in the first place, on the relative adaptation of the soil to produce an article abundantly; and secondly, on its price of freight to the market. When in southern Ohio, we find corn can be raised superabundantly, above all other products, and the market (on account of the very abundance) is not on the Atlantic, but at home—in cattle and hog feeding. Hence, we find Indian corn there very cheap. But, in the middle of the State, the article least produced is that, and the market is on the Atlantic, to which the freight is cheaper than to points further off. The result is, the price rises rapidly as we proceed towards the lake.

2. These facts being soon ascertained by the farmers, they cultivate the articles, in turn, which relatively bear the highest price. Thus, the fatness of the soil—the reason of prices—and the actual cultivation, are found to correspond.

REGISTERED AND ENROLLED TONNAGE OF THE UNITED STATES,

FROM 1839 TO 1848, INCLUSIVE—TEN YEARS, IN TONS AND 95THS.

Years.	Registered.	Enrolled and licensed.	Total tonnage.	Registered in whale fish'y.
1839	834,244 54	1,262,234 27	2,096,478 81	131,845 25
1840	899,744 76	1,280,999 35	2,180,764 16	136,926 64
1841	945,843 42	1,184,940 90	2,130,744 37	157,405 17
1842	975,358 72	1,117,031 90	2,092,390 69	151,612 74
1843	1,009,305 01	1,149,297 92	2,158,801 93	152,374 86
1844	1,068,764 91	1,211,330 11	2,280,095 07	168,293 63
1845	1,095,171 44	1,321,829 57	2,417,002 06	190,095 65
1846	1,130,286 49	1,431,798 32	2,562,084 81	186,980 16
1847	1,240,312 92	1,597,732 80	2,839,045 77	193,858 72
1848	1,360,886 85	1,793,155 00	3,154,041 85	192,179 90

Years.	Coasting trade.	Cod fishery.	Mackerel fishery.	Whale fishery.
1839	1,153,551 80	72,258 68	35,938 87	439 69
1840	1,176,694 46	76,035 65	28,269 19	.....
1841	1,107,067 88	66,551 84	11,321 13	.....
1842	1,045,573 39	54,804 02	16,096 83	377 71
1843	1,076,155 59	61,224 25	11,775 70	142 33
1844	1,109,614 44	85,224 77	16,170 66	320 11
1845	1,190,898 27	69,825 66	21,413 66	206 02
1846	1,289,870 89	72,516 17	36,463 16	439 58
1847	1,452,628 35	70,177 52	31,451 13	.....
1848	1,620,998 16	82,651 82	43,558 78	432 75

PRICES OF COTTON WOOL AT LIVERPOOL IN 1848.

STATEMENT OF THE QUOTATIONS OF COTTON WOOL IN LIVERPOOL AT THE CLOSE OF THE LAST WEEK IN EACH MONTH IN THE YEAR 1848; ALSO OF THE AMOUNT OF SALES, AND PROPORTION ON SPECULATION.

	January 28.	February 25.	March 31.	April 28.
	d. d.	d. d.	d. d.	d. d.
Upland, fair	4⅜ a ..	5⅛ a ..	4⅛ a ..	4⅛ a ..
New Orleans, fair	4⅞ a ..	5¼ a ..	4⅝ a ..	4⅝ a ..
Sea Island	7¾ a 25	7⅛ a 25	7⅛ a 24	7 a 24
Pernambucco	5⅜ a 7½	5⅜ a 7¾	5½ a 7½	5 a 7
Maranham	4¾ a 6¾	4¾ a 7	4⅝ a 6¾	4½ a 6½
Egyptian	5⅜ a 8	5⅜ a 8⅛	5¾ a 8½	5⅝ a 8
Surat	2⅝ a 4½	2¾ a 4½	2⅝ a 4½	2⅝ a 4½
West India	4½ a 7	4½ a 7	4½ a 7	4 a 7
Amount of sales	25,570	19,170	24,670	30,940
Proportion on speculation	.....	500	600	.....

	May 26.	June 30.	July 28.	August 25.
	d. d.	d. d.	d. d.	d. d.
Upland, fair	4½ a ..	4 a ..	4½ a ..	4½ a ..
New Orleans, fair	4⅝ a ..	4⅜ a ..	5 a ..	4⅝ a ..
Sea Island	7 a 24	6¾ a 24	6¾ a 24	6¾ a 22
Pernambucco	5 a 7	5 a 7	5 a 7	5 a 7
Maranham	4½ a 6½	4½ a 6	4½ a 6	4½ a 6
Egyptian	5⅝ a 8	5½ a 8	5½ a 8	5½ a 8
Surat	2½ a 4½	2½ a 4	2½ a 4	2½ a 4
West India	4 a 7	3½ a 6½	3½ a 6½	4 a 6½
Amount of sales	28,190	26,830	34,180	33,450
Proportion on speculation	1,200	1,200	2,700	1,100

	September 29.	October 27.	November 24.	December 29.
	d. d.	d. d.	d. d.	d. d.
Upland, fair	4 a ..	3¾ a ..	3⅞ a ..	4⅛ a ..
New Orleans, fair	4½ a ..	4 a ..	4⅛ a ..	4⅜ a ..
Sea Island	6½ a 20	6 a 20	6 a 20	6½ a 20
Pernambucco	5 a 7	4½ a 6	4½ a 6	4½ a 5¾
Maranham	4 a 5½	3½ a 5	3½ a 5	3¾ a 5⅛
Egyptian	5 a 7½	4¾ a 7½	4¾ a 7½	4¾ a 7½
Surat	2¼ a 3¾	2¼ a 3½	2¼ a 3½	2⅜ a 3¾
West India	4 a 6	4 a 6	4 a 6	4 a 6
Amount of sales	26,270	28,600	46,540	18,390
Proportion on speculation	800	500	7,000	5,700

CUBA EXPORTS OF SUGAR AND MOLASSES.

EXPORTS OF SUGAR FROM 1ST JANUARY TO THE END OF JUNE.

	From Havana.		From Matanzas.	
To	1848.	1849.	1848.	1849.
Boston.....boxes	6,985	10,150	11,479	4,856
New York, Philadelphia, and Baltimore	42,295	29,264	31,599	27,699
Other ports in the United States	8,167	5,369	5,692	3,119
Great Britain	31,325	18,749	9,586	15,149
Cowes and the Baltic	119,673	197,722	66,196	77,458
Hamburg and Bremen	42,871	24,152	21,925	6,381
Holland and Belgium	21,935	32,776	9,678	1,844
Spain	92,583	60,487	18,663	13,646
France, Italy, and other ports	42,034	30,656	17,266	24,522
Mexico, Sisal, and South America		747		250
Total	407,868	410,072	192,084	174,924

EXPORTS OF MOLASSES FROM 1ST OF JANUARY TO THE END OF JUNE.

To	From Havana. 1848.	1849.	From Matanzas. 1848.	1849.	From Cardenas. 1848.	1849.
Boston.....hhds.	5,493	8,900	8,387	7,351	21,917	18,491
Other eastern ports.....	7,059	6,476	19,524	14,135	17,028	10,196
New York, Philadelphia, & Baltimore.....	5,223	4,548	11,337	12,590	21,599	21,032
Southern ports of United States.	2,724	5,542	3,434	3,637	1,587	1,663
British provinces	95	1,099	3,329	4,544	643	342
Great Britain.....	....	533	2,142	6,063	966	1,836
Other places.....	226	90	214	....	....	23
Total.....	20,820	27,188	48,367	48,320	63,740	53,583

The following may be considered as the actual state and probable result of this year's crop of sugar and molasses:—

	Sugars. *Hhds.*	*Boxes.*	Molasses. *Hhds.*
Exports from January 1st to June 30th.....	8,402	157,542	48,630
In process of shipment.....	850	6,458	2,970
In second hands.....	....	15,000	.....
In first hands, and yet to be received.....	1,948	35,000	6,000
Probable crop for the year 1849.....	11,200	214,000	57,600

IMPORTS OF SUGAR AND MOLASSES INTO NEW YORK.

COMPARATIVE TABLE OF IMPORTS INTO THIS PORT FROM 1ST JANUARY TO 1ST JULY, 1848–9.

	Boxes of sugar. 1849.	1848.	Hhds. of sugar. 1849.	1848.	Bags of Sugar. 1849.	1848.	Hhds. of molasses. 1849.	1848.
Havana.....	15,128	24,754	2,538	1,760	.....	.....	1,600	1,971
Matanzas.....	9,848	16,411	4,561	3,172	.....	.....	5,764	6,410
Cardenas	593	665	7,394	5,134	.....	.....	14,491	15,682
Mariel.....	.....	.....	.....	.....	.....	.....	1,091	1,253
Sagua.....	1,768	1,256	6,864	6,275	.....	.....	3,326	3,137
San Juan.....	107	.....	786	721	.....	.....	300	222
Cienfuegos...	1,837	759	6,283	1,998	.....	.....	2,442	1,857
Trinidad.....	7,767	1,961	2,531	1,024	.....	.....	5,723	5,759
St. Jago.....	1,428	.....	4,067	1,943	.....	.....	197	208
Nuevitas.....	486	1,079	1,233	1,020	.....	.....	2,588	2,016
Mansanilla and Santa Cruz.	.....	.....	261	54	.....	.....	912	663
Total, Cuba...	38,962	46,885	36,518	23,101	.....	.....	38,434	39,178
Porto Rico....	.....	.....	21,167	17,555	.....	.....	8,829	7,899
St. Croix.....	.....	.....	1,147	767	.....	.....	1,752	920
Manilla.....	.....	.....	.....	.....	26,698	55,867	....	.....
Brazil.....	.....	.....	.....	.....	17,705	200	.....	.....
Louisiana....	.....	.....	39,886	30,918	.....	.....	8,607	12,888
Texas.....	.....	.....	1,588	661	.....	.....	790	507
Coastwise....	2,281	1,516	1,154	1,655	6,738	8,323	5,317	6,372
Total.....	41,243	48,401	101,460	74,657	51,141	64,390	63,729	67,764

THE BRITISH COLONIAL AND FOREIGN TRADE.

In the last number of *Tait's Edinburg Magazine* we find the following statements and remarks on the colonial and foreign trade of England:—

We sometimes hear shallow people say that we would do more business with the colonies if they were independent than we do at present. Well, let us watch what progress we make with Canada, as it has been shown to be in a transition state, and now rapidly verging to a state of practical independence, the Possessions' Act having

conferred that independence in commercial matters. Let us watch whether the exports of British goods to Canada are increasing or declining. If the dogma quoted be correct, our exports ought to increase; if the exports have diminished, we must find out the reason. It is not true that colonies take less from us than independent States. Our exports to the United States have been as high as £12,000,000; they now average between £6,000,000 and £7,000,000, although we have been greatly increasing our imports from thence of breadstuffs and cotton. The Americans are wealthy, but take only about 5s. 8d. per head from us. France, from whom we import £250,000 of merinos alone, besides much larger amounts of silks and wines, takes 1s. 6d. per head. Prussia, to whom we conceded great privileges in shipping, takes 6d. per head! Our northern colonies, the poorest of all, take 35s. per head; the West Indies, £2 17s. 6d.; the Cape of Good Hope, £3 2s.: the Australian settlements, £7 10s. These figures have been often repeated; we merely transcribe them from the *British Banner* of 18th October last, which adds that *one-third* of our total exports goes to the colonies. This large proportion of trade with our colonies is easily explained. The duties charged are from 2 to 4 per cent, with the exception of Canada, where, under the *free trade* experiment, the duties have advanced to 8¼ and 30 per cent, the average being 12½ per cent, with prohibitions on many articles, as set forth in the Glasgow memorial to the Colonial Office. The average colonial duty of 3 per cent contrasts favorably with those of our wealthy neighbors. France *prohibits* our staples of cotton and woolen goods; Belgium prohibits the staples, but admits certain things at from 8 to 15 per cent; the United States levy 30 to 40 per cent; Brazil levies 30 to 40 per cent; Caraccas, 25 to 33 per cent; Cuba, 37 to 40 per cent; Mexico, 70 to 75 per cent. We call 30, 40, and 70 per cent *penalties*, rather than duties. Political quacks "hover" about those countries, punishing themselves in taxing the consumer. The British manufacturer knows too well that these penalties prevent his consignments from paying cost; in short, that such enormous penalties put a stop to trade.

COMMERCE OF THE LIVERPOOL DOCKS.

SHIPPING, TONNAGE, AND REVENUE OF THE LIVERPOOL DOCKS FROM 1839 TO 1849.

Years.	No. of vessels.	Tonnage.	Income.
1839	15,445	2,158,691	£174,222 16 1
1840	15,998	2,445,708	197,477 18 6
Increase	553	287,017	£23,255 2 5
1840	15,998	2,445,708	£197,477 18 6
1841	16,108	2,425,461	195,261 4 3
Increase	110	.....	.....
Decrease	....	20,247	£2,216 14 3
1841	16,108	2,425,461	£195,261 4 3
1842	16,458	2,425,319	198,850 10 2
Increase	350	.....	£3,589 5 11
Decrease	....	142	.....
1842	16,458	2,425,319	£198,850 10 2
1843	16,606	2,445,278	212,402 3 7
Increase	148	19,959	£13,551 13 5
1843	16,606	2,445,278	£212,402 3 7
1844	18,411	2,632,712	208,191 7 1
Increase	1,805	187,434	.....
Decrease	.....	.....	£4,210 16 6
1844	18,411	2,632,712	£208,190 17 1
1845	20,521	3,016,531	250,541 13 10
Increase	2,110	383,819	£42,350 16 9

Years,	No. of vessels.	Tonnage.	Income.
1845	20,521	3,016,531	£250,541 13 10
1846	19,951	3,096,444	241,062 16 5
Increase	.....	79,313	.....
Decrease	570	.....	£9,478 17 5
1846	19,951	3,096,444	£241,062 16 5
1847	20,889	3,351,539	273,711 15 6
Increase	938	255,095	£32,648 19 1
1847	20,889	3,351,539	£273,711 15 6
1848	20,311	3,284,963	226,215 1 5
Decrease	578	67,576	£47,496 14 1
1848	20,311	3,284,963	£226,215 1 5
1849	20,733	3,639,146	255,926 0 9
Increase	422	354,183	£29,710 19 4

THE SUGAR TRADE OF NEW YORK AND BALTIMORE.

SHOWING THE COMPARATIVE SURPLUS OF THE ARTICLE THIS YEAR, AND THE CONSUMPTION FOR THE YEAR PAST, FOR THE PORTS OF BALTIMORE AND NEW YORK.

The importation last year into the port of New York was.....hhds.			108,702
Boxes, 120,354, at 2½ boxes to the hhd., equal to			48,142
Bags, 90,088, at 6 bags to the hhd., equal to			15,015
Making the total importation, for the port of New York.....			171,860
The importation into the port of Baltimore, (exclusive of boxes,) for the past year, was			27,000
Making the importation for both ports.....			198,860
The stock on hand on the 1st January, 1849—			
In New York was.....hhds.	4,549		
Boxes, 14,127, equal to.....	5,651		
		10,200	
In Baltimore		1,400	
			11,600
Making the entire consumption for the trade of both ports the past year..			187,260

Having now ascertained the wants of the trade of the two cities, it is proposed to examine and see how far the past receipts and present supply will go towards satisfying those wants, as it is a well-known fact that the great bulk of this year's supply has been received from the producing countries. In these latter there are only now remaining inconsiderable quantities of the "inferior" kinds, which meet ready sale for Germany, France, and England, where the high prices prevailing have created an export from this country.

To supply this year's consumption, we take the stock on hand in New York, January 1st, 1849.....hhds.		10,200	
Ditto in Baltimore at same period.....		1,400	
			11,600
Importations into the port of New York from January 1st to July 1st, 1849.....hhds.		101,460	
Boxes, 41,243, equal to		16,497	
Bags, 51,141, equal to.....		8,523	
			126,480
Importations into the port of Baltimore for same period, say.....			17,525
Making a total for both ports of			155,605
To supply a consumption of.....			187,260
Thus showing a deficiency of.....			31,655

In this year's supply, supposing the consumption or trade not to have increased this year. From this deficiency it would be a liberal estimate to allow for the receipts for this port and New Kork, for the ensuing six months, 6,655 hhds., which would then leave us, at the expiration of this year, short 25,000 hhds. But supposing the consumption, as has been the case with the trade of New York alone, for the past two years, to increase 20,000 hhds., and the immigration alone into that port would more than increase the consumption to this extent, we shall then find ourselves deficient 45,000 hhds.

IMPORTS OF BREADSTUFFS INTO GREAT BRITAIN.

Returns recently made to the British Parliament show that in 1848 the total quantity of wheat admitted to home consumption in the United Kingdom amounted to 2,189,876 quarters, and the average price of wheat during the same year to 50s. 6d.; the amount of duty received was £456,093. The quantity of barley so admitted was 888,925 quarters, and the duty received £93,275. The quantity of oats, 872,553 quarters, and the duty received, £93,268. The second return, moved for by Mr. George Sandars, shows that the aggregate quantity of wheat and wheat flour entered for home consumption in the United Kingdom during the operation of the act 5th and 6th Victoria, chap. 14, amounted to 5,359,257 quarters, of which 4,517,036 quarters were foreign, 289,752 quarters of British possessions, and 552,469 quarters Canadian, admitted at a fixed duty of 1s. per quarter.

COMMERCIAL REGULATIONS.

POSTAL TREATY BETWEEN GREAT BRITAIN AND THE UNITED STATES.

TABLES AND INSTRUCTIONS.

With respect to letters above the weight of a single letter, which is fixed at half an ounce in either country, the respective offices, in accounting to each other, shall employ the following scale of progression:—

For every letter not exceeding half an ounce in weight, one single rate.
Above half an ounce, but not exceeding one ounce, two rates.
Above one ounce, but not exceeding two ounces, four rates.
Above two ounces, but not exceeding three ounces, six rates.
Above three ounces, but not exceeding four ounces, eight rates.
And so on, two rates being added for every ounce or fraction of an ounce.

1. Between any office in the United States (Oregon and California excepted) and any office in Great Britain and Ireland, the entire postage is 24 cents the single letter, which may be prepaid or sent unpaid. Of this amount the British post-office, when it conveys the letter by its own packet and collects the postage, accounts to the United States for 5 cents; when it collects the postage without conveying the letter, it accounts for 21 cents. The United States post-office accounts to the British for 3 cents the letter when it carries and collects, and for 19 cents when it collects only. Payment by the party of anything less than the entire postage goes for nothing. The offices of exchange will treat such letters as wholly unpaid.

2. Between the offices of California and Oregon and those of Great Britain and Ireland, the entire postage is 59 cents the single letter, which may be prepaid or unpaid, and of which the British share is 3, or 19 cents, depending on the circumstances whether conveyed by the United States or British packet, and the United States share is 56, or 40 cents, depending on the same circumstances.

3. On all correspondence between the United States and the following named countries, the United States postage, and that only, *must* be collected in the United States by prepayment when sent, and on delivery when received, at the rate of 5 cents the single letter when conveyed by British packet, [unless from or to Oregon or California, then 40 cents,] and 21 cents the single letter when conveyed by United States packet, unless, as aforesaid, from or to Oregon or California, then 56 cents, to wit:—

Alexandria, city of, via Marseilles.
Algeria.
Austria, and the Austrian States.
Baden.
Bavaria.
Belgium.
Bremen, Free City of.
Brunswick.
Beyroot, city of, via Marseilles.
Dardanelles, the, via Marseilles.
Denmark.
France.
German States.
Gibraltar.
Greece, via Marseilles.
Hamburg and Cuxhaven.
Hanover.
Holland.
Hong Kong, China, island of.
Ionian Islands.
Lubec, Free City of.
Malta, island of.
Mechlenburg Schwerin.
Mechlenburg Strelitz.
Moldavia.
Naples, kingdom of, via Marseilles.
Norway.
Oldenburg.
Poland.
Prussia.
Roman or Papal States.
Russia.
Saxony.
Scutari, city of, via Marseilles.
Smyrna, city of, via Marseilles.
Sweden.
Switzerland.
Turkey in Europe.
Tuscany, via Marseilles.
Venetian States.
Wallachia.
Wurtemberg.
West Indies, &c., British, namely, Antigua. Barbadoes, Bahamas, Berbice, Cariacou, Demerara, Dominica, Essequibo, Grenada, Honduras, Jamaica, Montserat, Nevis, St. Kitts, St. Lucia, St. Vincent, Tobago, Tortola, and Trinidad.

This leaves, in those cases, the British and foreign postage to be collected at the other end of the route. But no British inland postage is to be charged in such cases.

[*Mem.* The foregoing provision does not supercede the pre-existing arrangements for sending correspondence to the German States and the countries east and south of them by the American line to Bremen, by which the entire postage to destination on the German correspondence may be prepaid or left unpaid, at the option of the sender.]

4. On all correspondence between the United States (Oregon and California excepted) and the following named countries through the United Kingdom, and by the routes here specified, there *must* be prepaid when sent, and collected when received, the following rates, of which the United States post-office will account to the British for all but 5 cents the single letter, unless a United States packet conveys it to or from England, and then for all but 21 cents:—

	Single letter.
Aden, Asia, via Southampton	45 cents.
Australia, via Sonthampton and India	53 "
" by private ship	37 "
Azores, islands, via Southampton and Lisbon	63 "
Bourbon and Borneo, islands of, via Southampton and India	53 "
Brazils, via Falmouth	87 "
Buenos Ayres, via Falmouth	83 "
Canary Islands, via Falmouth	65 "
Cape de Verd Islands	65 "
Ceylon, island of, via Southampton	45 "
China, via Southampton	45 "
Egypt, via Southampton	57 "
Greece, via Southampton	57 "
Heligoland, island of, via London	33 "
Indies, East, via Southampton	45 "
Java and Labuan, via Southampton and India	53 "
Lucca and Modena, via Fracne	31 "
Madeira, island of, via Southampton	65 "
Mauritius, via Southampton and India	45 "
Moluccas, via Southampton and India	53 "
Monte Video, via Falmouth	83 "
New Grenada, via Southampton	45 "
New South Wales, via Southampton and India	53 "
" " by private ship	37 "
New Zealand, via Southampton and India	53 "
" by private ship	37 "

	Single letter.
Parma and Placentia, via France	31 "
Philippine Islands, via Southampton	45 "
Portugal, via Southampton	63 "
Sierra Leone	45 "
Spain, via Southampton	73 "
Sumatra, island of, via Southampton and India	53 "
Syria, via Southampton	57 "
Van Dieman's Land, via Southampton and India	53 "
Venezuela, via Southampton	45 "
West Indies, foreign, namely, Cuba, via Southampton	75 "
Guadaloupe, Hayti, Martinique, Porto Rico, St. Croix, St. Eustatius, St. Martin, St. Thomas, via Southampton	55 "
Any British colony or foreign country, when conveyed to or from the United Kingdom by private ships	37 "

For single letters, which must be less than one-quarter of an ounce in weight:—

Aden, East Indies, Ceylon, island of, China, Hong Kong, island of, Mauritius, Philippine Islands, By closed mail, via Marseilles	British and sea	50 cents.
	Foreign	10 "
	American inland	5 "
	Total	65 "
Australia, New Zealand, Van Dieman's Land, Bourbon, Borneo, Java, Labuan, Moluccas, Sumatra, Or any other place in Indian Archipelago, By closed mail, via Marseilles	British and sea	58 cents.
	Foreign	10 "
	American inland	5 "
	Total	73 "
Egypt, Syria, By closed mail, via Marseilles	British and sea	46 cents.
	Foreign	10 "
	American inland	5 "
	Total	61 "
Egypt, Syria, Sicily, island of, Tunis, Africa, By French packet, via Marseilles	British and sea	26 cents.
	Foreign	20 "
	American inland	5 "
	Total	51 "
Sardinia, Spain, Via France	British and sea	26 cents.
	Foreign	10 "
	American inland	5 "
	Total	41 "

Note.—The *foreign* portion of the above rates is to be charged according to the fol lowing scale, namely:—

Weighing under a ¼ ounce	1 rate.
" ¼ ounce, and under ½ ounce	2 rates.
" ½ " " ¾ "	3 rates.
" ¾ " " 1 "	4 rates.
" 1 " " 1¼ "	5 rates.

And so on, an additional rate being charged for each *quarter of an ounce.*

Where the correspondence with the countries in the foregoing list is from or to Oregon or California, the single letter rate, to be collected by prepayment or on delivery, is to be in each instance 35 cents more than the amounts stated in the preceding table, of which the United States is to account to the British post-office for all but 40 cents, unless its packet conveys the letter to England, and, in that case, for all but 56 cents.

[*Mem.* There is a direct conveyance to Cuba, by United States packet, between

Charleston, United States, and Havana; the uniform rate of postage 12½ cents the single letter. There is, also, conveyance by British packet between New York and Mobile, in the United States, and the West India Islands, 5 cents being United States postage, to be prepaid when sent from said ports, and collected when received in the United States, unless mailed from or to a post-office more than 300 miles from port, then 10 cents—English and foreign postage unknown, the service not being embraced in the treaty.]

5. On all correspondence passing through the United States, between the United Kingdom and the following named countries, the British is to account and pay to the United States post-office the following stated amounts per each single letter, to wit:—

Countries.	When sent by United States packet.	When sent by British packet.
Canada and New Brunswick, (by the general mail).....	26 cents.	10 cents.
Havana, (by United States packet from Charleston).....	28½ "	12½ "
California and Oregon.....	56 "	40 "
Panama, (by United States packet from New York).....	46 "	30 "
Chagres, (by United States packet from New York).....	36 "	20 "
Any place in the West Indies or Gulf of Mexico, (by British packet from New York).....	21 "	5 "
Any place in the West Indies or Gulf of Mexico, (by British packet from Mobile).....	26 "	10 "

6. On all letters conveyed by *closed* mails between the United Kingdom and the British North American provinces, (the same being transported by British steamers,) the British is to account and pay to the United States post-office at the rate of 12½ cents for each ounce, net weight, and 2 cents for each newspaper.

7. On newspapers transmitted between the United Kingdon and the United States, there is a separate postage of 2 cents per newspaper, (or stamp duty in lieu of postage,) which is to be paid separately in each country.

8. But newspapers may be sent *in transit* through the United States, and also through Great Britain, to or from foreign countries, &c., at a transit charge of 2 cents per newspaper, to be paid by the post-office of one country to that of the other. The postage to be paid by the party sending a newspaper to, or receiving it from, a foreign country through Great Britain is 4 cents each.

9. Periodical works and pamphlets are not entitled by the treaty to transit conveyance, but they may be sent from the United Kingdom to the United States, and *vice versa*, at 2 cents of United States postage each, if they do not exceed 2 ounces in weight, and at 1 cent per ounce, or fraction of an ounce, when they exceed that weight, to be collected in all cases in the United States; and the same will be subject to an additional like charge in the United Kingdom, when not exceeding 2 ounces; but the third ounce raises the British charge to 6 pence, with an additional charge of 2 pence for each additional ounce.

10. All British and foreign letters, and all *foreign* newspapers remaining on hand, refused or not called for, are to be returned by the postmasters as dead letters and newspapers to the General Post-office, under address to the Third Assistant Postmaster General, separately from all other letters, and as frequently as regulations require. This is necessary to enable the United States post-office to reclaim the amount with which it stands debited upon each letter and newspaper.

11. Until the impracticability of forming a combined rate of postage upon the principles prescribed in the treaty is obviated by a change of the Canada and New Brunswick rates, (which change is confidently expected,) postage on correspondence between the United States and those provinces must be prepaid in each country.

12. The exchange offices of the two countries, in mailing to each other, are to postmark the letter, not with the entire postage, but with the credit and debit portions of it only; if a paid letter, with the credit amount in favor of the other country, in *red* ink, and with a "paid" stamp in the same color; if unpaid, with the debit amount against the other country, in *black* ink. But before the exchange office receiving such letter delivers it, or mails it to the interior, it is to restamp the letter with its own office stamp, in all cases, and with the "paid" stamp in *red* ink, if paid, if unpaid, with the amount, in *black*, of the *entire postage* to be collected.

J. COLLAMER, *Postmaster General.*

CUSTOMS REGULATIONS.

CIRCULAR INSTRUCTIONS TO COLLECTORS AND SURVEYORS ACTING AS COLLECTORS OF CUSTOMS.

TREASURY DEPARTMENT, *June 18th*, 1849.

Your particular attention is called, and strict observance enjoined, to the following regulations and forms prescribed for carrying into effect the provisions of the act approved 3d March, 1849, "requiring all moneys receivable from Customs, and from all other sources, to be paid immediately into the Treasury without abatement or reduction, and for other purposes."

From and after the thirtieth instant, the gross amount of all duties received from Customs must be deposited *daily* by the officer receiving the same, in the following manner, to wit:—

1st. At ports where Assistant Treasurers are established by law, the money will be deposited with such officers, and certificates in triplicate taken for such deposits.

2d. At ports where no Assistant Treasurers are established, the Collectors and Surveyors acting as Collectors of the Customs being designated depositaries in pursuance of law, the gross amount of moneys received by them respectively from Customs, will remain in the hands of such officers, as depositaries, and be passed to the credit of the Treasurer of the United States, and be faithfully kept by such officer, subject exclusively to the payments of drafts drawn by said Treasurer upon such officer in pursuance of law.

The officer thus acting as depositary of moneys received by him from Customs, will charge himself, in an account to be kept by him as a depositary, with the moneys passed to the credit of the Treasurer of the United States, and will credit himself with the amount in his account of the Customs.

To meet payments for expenses of collecting the revenue from Customs, debentures, or drawbacks, bounties, allowances, excess of deposits for unascertained duties, for the support of light-houses, and the maintenance of sick and disabled seamen, the Collectors and Surveyors acting as Collectors being constituted, in pursuance of the act under consideration, Disbursing Agents, money for these objects will be furnished them, at certain prescribed periods, out of appropriations of money in the Treasury, in accordance with the regulations, returns, forms, and estimates applicable to each particular case as hereunto annexed, lettered from A to I, inclusive.

You will perceive that the forms for estimates of amounts required to defray the *expenses of collecting the revenue, for the payment of debentures, or drawbacks, bounties,* and allowances, and to *refund excesses of deposits* for *unascertained duties*, require them to be made *monthly*, and the form of the Account Current embracing these disbursements provides that it be rendered *monthly*.

For the amounts required for the *support of light-houses*, and the *maintenance* of sick and *disabled seamen*, your estimates and accounts will be rendered *quarterly*, as heretofore, likewise your accounts of Customs.

The estimates for all these purposes you will forward to the Commissioner of Customs.

The form of the weekly statement of moneys received and deposited, contemplates that your deposits to the credit of the Treasurer of the United States will always be the precise amount received by you. You will transmit one of these statements weekly to the Treasurer of the United States, and another to the Secretary of the Treasury, except at ports where the receipt of the Assistant Treasurer is transmitted daily to the Department.

The moneys required to be paid immediately into the Treasury do not embrace official fees for entrance and clearance of vessels, taking bonds, granting permits, issuing custom-house documents, &c., or moneys received for fines, penalties, and forfeitures. The former will be retained in the hands of the officer receiving the same, and be accounted for as heretofore, and the latter, likewise, retained for a period of three months; and, if not remitted by the Secretary of the Treasury, in conformity with law, all sums thus received will, at the expiration of said period, be paid into the Treasury like other moneys.

W. M. MEREDITH, *Sec'y of the Treasury.*

BELGIAN DUTIES ON LINEN.

The Belgian government, by a royal decree of the 26th ult., has determined upon prolonging the allowance of bounties upon linen and hempen manufactures, and twists, exported to countries beyond Gibraltar, to the 1st of January, 1851. From the 1st of April, 1850, the bounty will be reduced to 7 per cent ad valorem for unbleached hemp and linen cloths, and to 8 per cent for bleached or dyed, and from the same period the bounty upon unbleached twists will be reduced to 6 per cent, and on bleached or dyed to 7 per cent.

THE UNITED STATES WAREHOUSING SYSTEM.

CIRCULAR INSTRUCTIONS TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS.

Treasury Department, July 16th, 1849.

In view of so much of the first section of the Warehousing Act of the 6th August, 1846, as refers to the disposition of *unclaimed goods*, and of the provisions of the 5th section of the act of 3d March, 1849, requiring all moneys receivable from customs, &c., to be paid immediately into the Treasury without abatement or reduction, and in modification of the circular No. 3, dated 23d of March, 1849, Collectors, and other officers of the customs are hereby instructed:—

1st. That the provisions of the 56th section of the General Collection Act of 2d March, 1799, being unchanged, and still in force, *unclaimed* goods, wares, and merchandise, cannot be allowed to remain in public store beyond the period of *nine months* from the date of their storage, but must, after the expiration of that period, be sold to realize the duties and proper charges, in the mode prescribed by law and existing instructions of the department.

2d. In pursuance of the provisions of the 5th section of the act of 3d March, 1849, before referred to, as well as the provisions of the Tariff Act of 30th July, 1846, and the Warehousing Act of 6th August, 1846, the duties on all goods, wares, and merchandise, entered and deposited in public warehouse under bond, must be paid within *one year* from the date of such warehouse entry. Where the duties shall not have been paid within the period mentioned, any such goods, wares, and merchandise, must be sold, to realize the duties and appropriate charges, in conformity with law and the instructions of the department.

3d. Any goods, wares, and merchandise, duly warehoused, upon which the duties shall have been paid within the prescribed period, may remain in public store, and thus retain the right to exportation with benefit of a drawback of the import duties on due exportation at any time within two years from the date of entry for warehousing, subject to the deduction from the drawback required to be retained for the use of the United States, by the 15th section of the Tariff Act of 30th August, 1842, and also to the payment of appropriate expenses. Any goods of the description before mentioned, may be transported under warehouse regulations, and be re-warehoused at any other warehouse port, and retain the right to drawback, upon due exportation therefrom, at any time within two years from the date of the original warehouse entry at the port of arrival.

4th. The storage on goods, wares, and merchandise in warehouse, will be required to be paid monthly, and if not so paid promptly, then all such goods must be subjected to increased rates for storage, equal to one-half of the former rates for the time they may subsequently remain in public store.

W. M. MEREDITH, *Sec'y of the Treasury.*

IMPORTATION OF GIN AND OTHER SPIRITS.

CIRCULAR TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS.

TREASURY DEPARTMENT, *July 26th*, 1849.

It is represented to this Department, that in some of the ports of the United States, the erroneous practice prevails of admitting the importation of gin and other distilled spirits, in cases or vessels of less capacity than ninety gallons.

By the provision of the 103 section of the General Collection Act of 2d March, 1799, the importation of any distilled spirits, (arrack and sweet cordials excepted,) unless in casks or vessels of the capacity of ninety gallons, wine measure, and upwards, subjects the said spirits to forfeiture, together with the ship or vessel in which it is imported. The act of 2d March, 1827, makes a further exception, as it relates to brandy, admitting that article in casks of a capacity not less than fifteen gallons; but with this single modification, the prohibitory provision of the act of 1799, above cited, remains unrepealed, and must therefore be strictly enforced.

It is due to the importers within those collection districts in which the erroneous practice referred to has existed, that they be immediately apprised, by a public notice from the Collector's office, of the views of this department in regard to importations of the article in question.

W. M. MEREDITH, *Secretary of the Treasury.*

ERRORS IN THE ESTIMATE OF DUTIES ON IMPORTS.

CIRCULAR TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS.

TREASURY DEPARTMENT, *July 27th*, 1849.

In the certified statements issued under the instructions of this department, dated the 23d July, 1845, to rectify errors in the estimate of duties on imports, it is observed that, in some instances, the importation referred to is of a date prior, by several months, and even years, to that of the application for relief.

It becomes expedient to advise you that this correction of errors, under the sanction of the department, must be limited to merely clerical errors of the custom-house, such as the erroneous computation of duty, or extension of amounts; or to obvious mistakes of the officers, such as the adoption of an erroneous rate of duty, or a false value of foreign coins or moneys of account; the correction of alleged errors of any other character being held as the subject of special consideration by this department, on the case being submitted with all its attendant circumstances.

As it regards claims for allowance for damage, the instructions of the department, dated the 12th June, 1848, and 1st and 17th February, 1849, are to be strictly observed. Where an alleged omission of such allowance in the estimate of duties is attributable to the officers of the customs, upon a full report of the case, the department will take into consideration the propriety of authorizing the allowance; but in no case can such omission be supplied where proof of the existence of the damage has not been lodged in the custom-house, as prescribed in the 52d section of the General Collection Act of 2d March, 1799.

W. M. MEREDITH, *Secretary of the Treasury.*

IMPORTATION OF COAL FROM BRITISH PROVINCES.

CIRCULAR TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS.

TREASURY DEPARTMENT, *July 28th*, 1849.

It having been satisfactorily ascertained by this department, in reference to importations of coal from the adjacent British Provinces, that, owing to the custom and mode of measurement in those Provinces, the quantity landed in the United States, under the mode of measurement pursued in our ports, usually exceeded, by at least 20 per cent, the quantity given in the invoice, it was thought proper to direct, in circular instructions dated the 31st December, 1847, that, on importations of this article from the Britssh Provinces adjacent to the United States, where the actual quantity, on measurement, when landed, was found to exceed, by not more than 20 per cent, the quantity given in the invoice, no increase of value in the assessment of the duty was to be made; but that if the excess should be more than 20 per cent, then the value of such excess over 20 per cent, should be added in assessing the duties; it being expressly understood, that under no circumstances should the duty be assessed upon an amount less than the invoice value, as provided in the 14th section of the Supplemental Collection Act of the 1st March, 1823, and the 8th section of the Tariff Act of 1846.

It being now represented to the department, from some of the collection districts, that the invoices of the article in question from the British Provinces, are no longer made out in chaldrons, but are uniformly made out in tons, it becomes necessary to advise you, that the rule established by the department, for special reasons, in relation to the invoice measure, is not to be applied to the invoice weight of coal; and that, in ascertaining value, and estimating duty on importations of that article, the actual quantity is to be taken, as shown by the United States' Custom-house weight, and without any allowance for excess.

W. M. MEREDITH, *Secretary of the Treasury.*

CHATTEL MORTGAGES TO BE REGISTERED.

The following are the provisions of "An act requiring chattel mortgages to be registered," which passed the Legislature of New York State, March 1, 1849:—

SECTION 1. It shall be the duty of the clerks of the several towns and counties in this State, in whose offices chattel mortgages are by law required to be filed, to provide proper books at the expense of their respective towns, in which the names of all parties to every mortgage, or instrument intended to operate as a mortgage of goods and chattels, hereafter filed by them or either of them, shall be entered in alphabetical order, under the head of mortgagors and mortgagees, in each of such books respectively.

Sec. 2. It shall be the duty of the said several clerks to number every such mortgage or copy so filed in said office, by endorsing the number on the back thereof, and to enter such number in a separate column in the books in which such mortgages shall be entered, opposite to the name of every party thereto; also the date, the amount secured thereby, when due, and the date of the filing of every such mortgage.

Sec. 3. The said several clerks for services under this act shall be entitled to receive therefor the following fees:—For filing every such mortgage or copy, six cents; for entering the same in books as aforesaid, six cents.

Sec. 4. This act shall take effect within thirty days after its passage.

INSPECTION OF MACKEREL IN MARYLAND.

Judge Purviance has decided, in a case recently before him, that where fish are merely passing through the State of Maryland, and not brought into it for sale, the Inspection Laws do not apply.

The law, until now, has been understood as subjecting fish to inspection, let them be brought into the city under any circumstances; and where resistance was made, recourse has been had to the ordinance, and magistrates have given judgment in favor of plaintiffs. Judge P.'s decision will now settle the question in another way; and other articles of provisions, &c., brought in under similar circumstances, can be passed without being subject to inspection. This decision will be particularly favorable to our packets and railroads, as most of that trade, where such articles were bound west, has hitherto been diverted from this city in consequence of our onerous ordinances, as we have shown on former occasions.—*Baltimore Commercial Journal.*

NAUTICAL INTELLIGENCE.

DANGEROUS REEF.

The following letter has been published by Captain J. W. Nagle, of the brig William, arrived from the Fegee Islands, at Sidney, New South Wales:—

To the Editors of the Sydney Morning Herald.

Gentlemen:—On Wednesday, December 27th, I made a reef, on which the brig Rapid, of Sydney, struck on the night of January 7, 1841. It lies in lat. 21° 42′ S., lon. 174° 44′ E. The reef is on a level with the surface, with a continual surf on it. There is a small sand patch in the center, about five feet above the level of the sea. The extent of the reef is about a mile and a half, running in a N. W. and S. E. direction. Being so very low it is a most dangerous one. It is distant from Myurallo or Rautarea, 260 miles. And on Monday, January 29, at 11h. 30m. P. M., I made a reef (which was not laid down in my chart, although I found out afterwards it is in Norie's edition for 1844,) in lat. 30° 58′ S., lon. 159° E., and is called Elizabeth's Reef. In my chart (which is an old one) there are several shoals laid down which I was informed did not exist. For instance, the Golden Grove Shoal, in lat. 29° 12′ S., lon. 159° 50′ E.: the Middleton Shoal, in lat. 29° 10′ S., lon. 158° 20 E.; and Sir Charles Middleton's Island, in lat. 27° 52′ S., lon. 159° 30′ E. In Norie's edition of 1844, the Golden Grove Shoal is laid down in lat. 29° 30′ S., lon. 160° E. Here there is a difference in latitude of eighteen miles, and in longitude of ten miles. Norie lays down Middleton's Shoal in lat. 29° 14′ S., lon. 158° 54′ E.—the difference in latitude four miles, and longitude thirty-four miles; and in Middleton's Island, which Norie lays down in lat. 28° 13′ S., and lon. 160° 31′ E., the difference is very great, being thirty-one miles in latitude, and sixty-one miles in longitude. I should give the preference to Norie for accuracy, for I found the Elizabeth Reef to have been correctly laid down. I have no doubt there are a great many people sailing out of Sydney who are aware whether those shoals exist or not; but there are a much greater number who know nothing about them. I think it is the duty of every seaman to make public any information he may have acquired, either by actual observation or from information, respecting the position of rocks and shoals which are not generally known; but we too often neglect doing so, which arises frequently from diffidence or indolence.

I remain, yours, &c., J. W. NAGLE.

A ROCK OFF THE COAST OF PATAGONIA.

TREASURY DEPARTMENT, *August 13th*, 1849.

The following letter from the Superintendent of the Coast Survey, is published for the benefit of navigators:—

COAST SURVEY STATION NEAR
NORTH DEERFIELD, N. H., July 31, 1849.

SIR:—I have received, from the hydrographer of the British Admiralty, notice of a rock off the coast of Patigonia, not laid down upon the charts. The Sirius struck upon this rock on the 10th March, 1849, and reports it to be in "about latitude 48° 07′ south, and longitude 65° 37′ west, nine miles off Spiring Bay." I recommend that publicity be given to this account for the benefit of our navigators.

Very respectfully yours,

A. D. BACHE, *Superintendent U. S. Coast Survey.*

Hon. WM. M. MEREDITH, *Secretary of the Treasury.*

A NEW SHIPPING SIGNAL.

A newly invented apparatus for the prevention of collision at sea during foggy and thick weather, when lights and other methods now in use are altogether unavailable, was exhibited lately at Lloyd's Rooms, Royal Exchange, Liverpool. The machine is a production of a Mr. Wells; it is extremely portable, occupying a space about two feet square, and capable of being worked by one man, who, turning a cog-wheel acting on a force pump, produces a volume of sound that will penetrate several miles distant, which being continuous, satisfactorily marks the position of a vessel. The machine, which was inspected by numerous merchants, ship-owners, captains, and practical nautical men, was highly approved of, and it appeared to be the prevailing opinion, that all vessels proceeding to sea should be furnished with one, not only to prevent collisions, but also to be used when off a lee-shore, or in distress.

CAPE HATTERAS COVE—BULL'S BAY.

The National Intelligencer published a report from A. D. Bache, Superintendent of the United States Coast Survey, comprising information from Lieutenant Commanding J. N. Maffit, relative to a cove which has been formed since 1845, by the extension of Cape Hatteras to the inlet southward and westward of Cape Hatteras, formed in 1846, and to the use of Bull's Bay, on the coast of South Carolina, as a harbor of refuge, as follows:—

1. Hatteras Cove lies to the westward of the extreme point of Cape Hatteras, is sheltered from the northeast, and affords good anchorage in four to five fathoms water, with a bottom of "soft blue mud." From the anchorage, Hatteras light bears N. N. E., distant about one mile and a half. Since 1845 the S. W. spit of Hatteras has made out nearly three eights of a mile.

2. Hatteras inlet is twelve miles to the southward and westward of the cape. Twelve feet can be carried over the bar on the ocean side, and there is secure anchorage in five fathoms water. The entrance with a pilot is easy. Lt. Maffit's statements refer only to the use of the inlet as a harbor of refuge.

3. Bull's Bay is about twenty-three miles north of Chaleston, on the coast of South Carolina. Thirteen feet can be carried across the bar at low water spring tides, the rise and fall of which is six and three quarters feet. To enter, "bring the N. E. bluff a point of Bull's Island, to bear N. W. by W., (by compass) and run for it. When within three quarters of a mile of the point, steer N. three quarters W., until it is passed. Then follow round the shore, and anchor at pleasure in soft bottom." "In leaving the bay, keep away until the outer spit is cleared, which bears S. E. by S. from the bluff part of Bull's Island, distant three and a quarter miles."

BREAKWATERS AND LANDING PLACES.

We have lately inspected models of some inventions connected with landing places, which seem to deserve the inspection of those whose attention is directed to such matters. They consist of a floating pier and buoys, double action yielding moorings, also an attached self-adjusting tidal ladder, constructed on a new principle, and which seems well suited for the purposes intended. The inventor has also constructed a life-

boat and traveling crane for the preservation of life from stranded vessels. This is attached to his floating pier, which, from its construction, he considers will be enabled, at all times, and in all weathers, to maintain its position. The name of the inventor is Savage. A floating bath and breakwater, a floating light, and a plan for extinguishing fires on board ships, by the provision of a series of perforated pipes under the decks, bear further testimony to his ingenuity and skill.—*British Builder.*

RAILROAD, CANAL, AND STEAMBOAT STATISTICS.

THE RAILROADS OF GEORGIA.

In a former number of the *Merchants' Magazine*, (Vol. XXI., No. 2, pages 241–242,) we published a comprehensive account of the railroads of Ohio, derived from authentic data. The *Savannah Republican*, a reliable source, furnishes us with a succinct account of the Georgia railroads now in operation, now built, and at what cost; also what lines are projected, and being constructed, &c., which we here subjoin. The facts disclosed by the Republican are highly creditable to the intelligence and enterprise of the citizens of that State:—

"The Macon and Western Railroad, the Phœnix of the *old Monroe Road* first claims our notice. The Monroe Road was projected to run from Macon to Forsyth, and afterwards the project was extended to Atlanta, Georgia. It was a bold movement in its inception, but hazardous in the extreme, for when its authors started, there was no prospect of a road below Macon or above Forsyth. When it was determined to build the Western and Atlantic, and Central roads, the Monroe Company was to form the connecting link between them, and thus was a way looked for from the Tennessee River to the city of Savannah. After many struggles, and the establishment of the present flourishing town of Griffin, the company failed—its affairs went into Chancery, and the road was sold. It is now in new hands—has been completed and in operation for near three years, and is doing a splendid business. A million of dollars was lost to the people by the old company, but the new company has finished a road worth over a million of dollars, on an outlay of not much over half a million. We shall consider the cost of the road, 101 miles in length, at $1,500,000.

"The Georgia Railroad, from Augusta to Atlanta, 171 miles, was finished about three years ago. It has a branch of 40 miles in length to Athens. It has cost, in round numbers, with all its equipments, $3,500,000.

"The Central Road from Savannah to Macon, 191¼ miles, was finished five years ago. Its cost, from first to last, with its equipments, may be placed at $3,000,000.

"The Memphis Branch Railroad, seventeen miles long, from Kingston on the Western and Atlantic Railroad to Rome, at the head of the Coosa River, has been finished within the last year. We do not know its cost, but it may be fairly put down at $130,000.

"These four roads, together 520 miles in length, were built *entirely by individual and city corporation subscriptions.* Not a dollar was ever advanced to either of the corporations by the State.

"The Western and Atlantic Road, 140 miles in length, from Atlanta to Chattanooga, on the Tennessee River, in the State of Tennessee, was opened to Dalton, 100 miles, about two years ago, and will be opened to Chattanooga on or about the first day of November next. Then will Georgia have a line of railroad from Savannah to the Tennessee River of 432 miles, and a line from Augusta to Atlanta of 171 miles, besides the branches to Athens and Rome. These lines will, in a brief period, be extended through the Nashville and Chattanooga Road to Nashville.

"The Western and Atlantic Road has been built by the State out of the public treasury. All the citizens of the State, therefore, have contributed in equal proportion to the erection of this great road—an everlasting monument of the wisdom and liberality of the State Legislature. Its cost, with equipments, when completed, may be placed at the sum of $4,000,000.

"Thus have 660 miles of railroad been constructed and equipped within the last fifteen years, at a cost of about $12,000,000, *two-thirds* of which amount have been furnished by individual enterprise and exertion, and one-third by the State.

Of the skill and perseverance displayed in these truly great works, or of the effects of the roads on the prosperity of the people, we need not say a word. *The roads shall speak for themselves.*

The Southwestern Railroad is the chief road of those projected and under way. It is to run from Macon across Flint River, near Traveller's Rest, to Fort Gaines, on the Chattahoochee—distance about 150 miles—estimated costs, one and a half millions of dollars. The object of this work is to develop the beautiful and fertile portion of the State commonly known as *Southwestern Georgia*, the finest region for the cultivation of cotton in all the South, and to bring the products of it to an Atlantic market at Savannah. The road is destined, in our opinion, to be a part of a great line which will terminate at Pensacola, and thus to be part of the greatest contemplated line in the Union—a line of ocean steamships and railroad from New York to New Orleans, which can convey passengers between these important cities in ninety-five hours. The subscriptions to this magnificent work have reached $650,000; over five hundred hands are at work; about twenty-five miles of the road are graded, and the whole work, to the western bank of Flint River, is progressing in so spirited a manner, as to leave no doubt of the crossing of the Flint by the first day of August, 1850.

"The influence of this road will be felt throughout the length and breadth of Georgia. There is no portion of the State which is not directly interested in it—it is destined to improve the condition of the whole State, and all the railroads now in use. Its advantages may be thus briefly stated:—1st. It will develop the best cotton region of the South. 2d. It will afford in Georgia a market for the cotton grown in the State. 3d. It will be an avenue for the introduction into Georgia of West India produce, and various articles of Western production coming from New Orleans. 4th. It will be an avenue for the productions of the Cherokee Country and Tennessee, to the *planting* lands of Georgia and Florida. 5th. It will be part of a great line of travel from Tennessee, and parts further west, to the Gulf of Mexico. 6th. It will be on the great thoroughfare of the Union, from North to South, whether that great thoroughfare shall be by railroad alone, or by railroad and steamships; and it will be of incalculable value to the government and people of the United States, as it will connect the most southwestern Atlantic port, of ample depth of water, with the very best harbor on the Gulf of Mexico.

The next road in process of construction is the Muscogee Road, from Columbus to Barnesville—distance, 75 miles—estimated cost, about $800,000. The Muscogee Company is at work with considerable force, and has made arrangements, we understand, by which its road will soon be placed under contract; already, some twenty-five miles have been let. This road will connect the important city of Columbus with *every other* important point in the State, and with the great improvements north and west, giving to its citizens an outlet to the Atlantic for their products, and an inlet for the iron and grain of the mountain region.

The Milledgeville Road, from Gordon, on the Central Road, to the seat of government of the State—distance 16 miles—estimated cost about $135,000. The object of this road is to render permanent the present seat of government, by opening to it railroad communication from all points, and to give to the planters of central Georgia a way for their products to the sea. As Milledgeville is near the center of the State, and a convenient and healthy position, the object seems to be one of general and great importance. Several miles of this road are graded, and, with a little aid beyond the present subscriptions, the work could be finished within a year.

"These *three* roads are the only ones now being actually constructed.

"Of the *projected* roads, the first is the road from Atlanta, Georgia, to West Point, thence to unite with the Montgomery and West Point Railroad. The object of this work is to connect the Charleston and Georgia railroads with the Alabama and Western improvements. The road is destined to be part of a great thoroughfare of travel, and it will open to Atlantic markets the northwestern part of the State. The distance is about 90 miles—the cost will be about a million of dollars.

"Then there is the road from Augusta to the Central Road, at or near the Eighty Mile Station. Distance about 53 miles—estimated cost, $530,000. We view this road as *one of vital* importance. It will connect Augusta with Savannah by a shorter and less expensive road than that from Augusta to Charleston—it will bind the upper and lower country in the closest bonds—it will build up the two first cities of Georgia, and will do more to throw the advantages of Georgia roads into Georgia's seaports, than any other work which has been, or can be devised.

"The five roads indicated in this article, when finished, would add 385 to the number

of miles of railroad now in operation, and run the amount of ironway to over 1,000 miles! The cost of these additional 385 miles will not exceed $4,000,000, and the enterprising citizens of Georgia can, and will pay the half, or even more than half that amount, *if the State of Georgia, which hitherto has not given a dollar in aid of individual capital*, will, now that individual capital and liberality have placed the State on ground so high, *and made the outlets for the State's own road* pay the residue."

ANDROSCOGGIN AND KENNEBECK RAILROAD.

It appears by the *American Railroad Journal*, that the annual meeting of the stockholders of the Androscoggin and Kennebeck Railroad Company, on the 3d of July, 1849, was made the occasion for the opening of the road to Winthrop, 20 miles from Lewiston Falls, at which place the meeting was held for the election of Directors. The train left Portland at 7 o'clock, A. M., with eight large cars, and received a constant accumulation of people at each station until its arrival at Winthrop, 54 miles from Portland. The approach of the train was announced by the discharge of cannon, and the ringing of bells. The immense concourse of people assembled at the terminus greeted its arrival with enthusiastic cheering. There was no formal opening of the road, and the completion of the line to Waterville, 83 miles from Portland, is looked forward to as the occasion of a public demonstration.

The reports of the Directors and Treasurer were read by the Hon. S. P. Benson, the Secretary, giving a full statement of the condition of the company. By these, it appeared that the amount expended for the construction and equipment of the road to June 18th, 1849, was $927,780 77, and the money received into the treasury to the same date amounted to $937,754 75. Of this sum, $446,907 was received on account of the assessments on the stock, and the balance from loans. The length of the line is 55 miles, and the Directors estimate the entire cost of the road and equipment at $1,350,000. They require a further sum of $311,773 above the present means to complete it. The grading is nearly finished to Waterville, and the laying of the track is going forward with a view to its completion by October, 1849. The equipment of the road consists of 4 locomotive engines, 6 passenger cars, 10 box freight cars, 20 platform cars, and one mail car. The stockholders voted to reduce the number of Directors from 13 to 7, after full discussion.

THE "MAY FLOWER," A WESTERN STEAMBOAT.

James T. Hodge, Esq., in charge of the mining and metallurgical department of the *American Railroad Journal*, left this city in June last, on an exploring expedition to the copper mines of Lake Superior. From some interesting notes of travel, communicated to that Journal, we extract, or condense the following account of the new boat, May Flower, Capt. Van Allen, in which Mr. Hodge had the good fortune to secure a passage to Detroit.

"We were so fortunate as to meet the new boat, May Flower, Capt. Van Allen, and secure a passage in her to Detroit. Though familiar with the magnificence of our eastern boats, and not unacquainted with the fine boats that have before plied upon these waters, we were not prepared to see one quite equalling the best qualities of all others, and in some respects superior to any thing we have seen elsewhere. She was built the last winter at Detroit, by Mr. J. Lupton, from New York, J. W. Brooks, Esq., superintendent of the railroad company, having general charge of her construction. Her marine timbers are bound together with iron bars, interlaced one with another in such forms as to give greater strength to her frame, than has ever been attained before. Every stick put into her, and every bar is of the very best quality. Indeed, it seems with every thing on board that the question was not whether this and that will answer, but whether it is the most substantial and excellent of its kind. Her dimensions are, length, 290 feet, 35 feet beam, 13½ feet hold, extreme width, 65 feet on deck. The engine occupies the center of the boat, and the machinery passes up through the decks, breaking the continuity of the long upper saloon, which but for this extends nearly the whole length of the boat. On its sides are the state rooms, about the middle of the boat, in a double row on each side, the berths arranged athwart-ship, and doors opening at each end of the state rooms, which stand in single row. Twenty-five stern rooms in the after saloon are furnished in the perfection of

neatness and good taste, as quite spacious bed rooms, with bedsteads instead of berths. The whole number of state rooms on the upper deck is 85; all are provided with hydrants for draining water, and escape pipes for conveying it off, a convenience we have not seen in other boats. On the main deck is a smaller saloon aft, with six spacious elegantly furnished chambers, called bridal chambers, on each side. Under this is another cabin, with 150 berths, and aft of this a sort of nursery room, furnished with baby jumpers, cradles and such things, with which we do not profess much acquaintance, and, in fact, from this being associated with sundry disagreeable sounds, we think good judgment has been shown in locating the repository of these babies, no doubt the same good judgment has provided thick double walls between this room and the 150 berths of the lower cabin. Nor have the accommodations for the steerage passengers forward been neglected. Their cabin is spacious and well provided with beds, well lighted and well ventilated. Rooms for a variety of purposes are found along the main deck; each department, whether of cooking, of baggage, of lamps, of porters, having its separate quarters. There is even a room for the carpenters, one or more being attached to the boat, and constantly employed on her trip.

The engine was built at the West Point Foundry, and was put up by Messrs. Hogg & Delamater, of New York. The steam cylinder is 72 inches diameter, length of stroke 11 feet. The wheel is 36 feet diameter, and its buckets 11 feet long. There are 3 boilers 9½ feet diameter, and 30 feet long, weighing over 65 tons. This heavy machinery works with great smoothness and power, propelling the boat with greater speed than any other boat on the lake. In a late trip, she made the distance from Buffalo to Long Point, 75 miles, in three hours and twenty-seven minutes, which is at the rate of twenty-two miles per hour.

The boat, we suppose, was named for the May Flower of 1620—not certainly for their resemblance in convenience and comforts—perhaps because each is employed in transporting emigrants to a western shore. A painting hangs in the saloon representing the landing of the Pilgrims, on what poets and painters will persist was "a rock-bound shore;" but which all who have seen it know was a sandy beach, with a few scattered boulders, on one of which our Pilgrim Fathers stepped from their boat.

BRITISH RAILWAY STATISTICS.

A return lately printed by order of the House of Commons, states that the total number of passengers conveyed on all the railways in the United Kingdom of Great Britain and Ireland during the half-year ending 31st December last, amounted to 31,630,292, of whom 3,743,602 were first class passengers, 12,191,549 second class passengers, 7,184,032½ third class passengers, and 8,450,623½ parliamentary passengers. The gross total receipts from passengers amounted to £3,283,301, of which sum £1,033,516 was received from first class passengers, £1,360,468 from second class passengers, £320,862 from third class passengers, and £597,071 from travelers by parliamentary trains. The receipts arising from goods, cattle, carriages, parcels, and the conveyance of the mails, amounted to $2,461,662, making an aggregate receipt for the half year of £5,744,964.

REGULATIONS OF THE NEW ENGLAND RAILROADS.

We learn from the *Pathfinder Guide for the New England States*, that at a recent meeting of the New England Association of Railroad Superintendents, which was fully attended, it was unanimously voted, that in future, all new arrangements in the time and manner of running trains, be made so as to go into operation on the first Monday of each month. In order to secure a general concurrence in this plan, a circular has been addressed to all the railroad superintendents in New England, not present at the meeting, inviting their co-operation, and assistance in the establishment of this important regulation. The plan will, without doubt, be adopted, and thus enable the publishers of the *Pathfinder Railway Guide* to issue their publication on the first Monday of each month, containing the most accurate information of the hours of departure, and all other changes that may have been made up to the time of its publication. The *Railway Guide*, as we stated in a former number of the *Merchants' Magazine*, is the organ of the New England Association of Railroad Superintendents, and may, therefore, be regarded as an authority. It is under the editorial supervision of Silas W. Wilder, Esq., a gentleman singularly well qualified for the labor.

JOURNAL OF MINING AND MANUFACTURES.

THE SHEATHING METAL MANUFACTURED AT TAUNTON.

The editor of the *Boston Daily Journal* has been furnished, by Messrs. Henry N. Hooper & Co., of that city, with the following statement of the average wear of the yellow sheathing metal manufactured at the Taunton Copper Works, for which they are the selling agents in Boston. As it is a subject of considerable importance to ship-owners, we transfer the statement to the pages of the *Merchants' Magazine*:—

Messrs. Hooper & Co. have, for nearly six years, kept a register of every suit of this metal sold by them, in which are entered the names, class, and ownership of the vessels; the number and weight of sheets required by each; and the average weight of the sheets per square foot. Also, when it could be ascertained, the date of the sheathing being stripped, and the weight of the old metal. They have been able to obtain all these details in fifteen instances, and from these the following tabular exhibit is prepared, by which it will be seen that while the average duration of a suit of the yellow metal, compared with copper, is nearly as 29 to 24, the latter costs almost 50 per cent more. Hooper & Co. consider it also but justice to the manufacturers, to state that could the duration of a suit and weight of old metal have been obtained in a greater number of cases, the average time of wear would probably appear considerably longer, and the average loss per cent in weight by service considerably less, as a large proportion of the vessels, from which the table is made up, are of small size, sheathed with light metal, and were frequently in port, imbedded in dock mud, the destructive chemical action of which on such metal is well known to every person conversant with the subject. The average weight of the yellow sheathing metal, it will be seen, is much lighter than the ordinary copper sheathing. Several of the suits, moreover, were stripped while perfectly good, in order to repair the vessels:—

	Weight of suit when new. *Lbs.*	Average weight per square foot. *Ozs.*	Months in wear.	Weight of the old metal. *Lbs.*	Loss per cent by wear.
	3410	19.56	37	805	77
	4013	21.98	35	1812	55
	5105	21.35	29	3390	34
	3099	20.38	21	2350	24
	8013	21.87	13	6573	18
	3884	22.65	44	2214	38
	2596	19.54	46	1095	68
	3586	18.89	26	2470	31
	8757	24.08	31	5869	33
	5432	26.33	26	3565	34
	4530	21.13	35	2800	38
	4460	25.00	23	3284	27
	4291	21.90	17	3130	27
	3352	22.02	25	1947	42
	2800	20.16	23	1050	54
Average.	4455	21.78	28 22-30	2820	37

By the aid of this table, Messrs. Hooper & Co. have arrived at the following results, which are worthy the attention of every ship-owner in the land.

In 15 suits of yellow sheathing metal, averaging 21 78-100 ounces per square foot, the mean duration was 28 months and 22 days, with a loss by wear of 37 per cent of the original weight.

The average wear of copper sheathing of ordinary weight does not exceed 24 months at best.

On the 14th of June, 1849, at which date this statement was drawn up, the cost of yellow metal was 18 cents per pound new, and the value of old 12 cents in exchange.

The cost of copper was 21¼ cents per pound for new, and the value of old 17 cents in exchange.

1,000 sheets yellow metal weight, cost	$1,144 08
Less value when old	480 48
Total	$663 60
1,000 sheets copper, same weight, cost	$1,366 54
Less value when old	540 26
Total	$826 28

The wear of 1,000 sheets of copper for 24 months, costing, as above shown, $826 28, it follows that for 28 months and 22 days, the duration of a suit of yellow metal, the expense will be equal to $989 12, being 49 per cent more than this last.

No comment can add to the force of these statements of unquestionable facts, which must commend themselves to the earnest consideration of every merchant and ship-owner under whose eye they fall.

THE MANUFACTURE OF ENVELOPES FOR LETTERS.

The recent change in the post office regulations, has enabled letter writers to make use of the desirable facility and guard of an envelope. It may seem a little thing to manufacture this article, but on the contrary, the machine employed is of the most complex and ingenious character, and the various stages of the operation are highly interesting.

We had the pleasure of spending an hour or two recently in the establishment of Messrs. Colman & Jones, South Fifth-street, and of viewing the processes through which the paper passes before being converted into its destined form. The manufacture is as yet in its infancy, and all its departments have scarcely yet been fully organized; but they will be completed in a short time, and then it will be, perhaps, the most extensive establishment in the country. But four folding machines, and one cutting press, were in operation while we were present; yet from the rapidity with which they turned out the finished envelopes, we could easily conjecture, that when all the contemplated improvements are completed, the daily manufacture will be immense.

A pile of paper is first laid under the cutting press, and the flat forms of the envelope are cut out at once. These are then taken to the folding machine, which is one of the most singularly constructed and beautiful pieces of mechanism we have ever seen. It requires but one person to feed it, and performs all the rest of the operations itself; for the paper, cut in proper form, being placed in a fixed position, is seized by nippers, and drawn forward to a bed, where it is held firmly by an over-hanging plate of metal, which covers just so much as marks the size intended to be made, leaving the parts to be folded over loose. The sides are then, by means of plates advancing toward each other, folded over, and as they retire, a roller covered with gum passes under the surface of a double curved piece of brass, which instantly falls upon the paper, and, as it rises, another plate turns over the outside fold, while, at the same time, a roller presses on it and causes adhesion. This being done, the bed on which the envelope rests falls to an inclined position, and being caught between rollers, the finished article is passed through a trough into a receiving basket. The only remaining labor is to gather the envelopes up, and sort them into packages of twenty-five each. The whole is done with great rapidity, and so various and contrary are the motions of the machine, that it appears almost to be, in some degree, sentient.

NEW PROCESS FOR THE MANUFACTURE OF SULPHATE OF SODA.

We learn from the "Comptes Rendus" of the 5th of February, that Messrs. Thomas, Dellisse and Boucard, civil engineers, have presented to the Academy the description of a new process for converting culinary salt into sulphate of soda, by means of the sulphate of iron. This would allow the pyrites to be turned to very good account. The dry and pure sulphate of soda would not cost more than 2½ francs the 100 kilogrames, instead of 12 to 18 francs, which is the ordinary price. The new process would, moreover, avoid all the disadvantages attending the production of the vapors of muriatic acid.

IMPROVEMENTS IN THE STEAM ENGINE.

Messrs. J. & G. Davies, of the Albion Foundry, Staffordshire, (England,) have just obtained a patent, the improvements sought to be secured by which are as follows:—

1st. A mode of converting rectilinear into rotary motion, by supporting the crank-pin in brasses, which slide in the cross-head of the piston. The brasses, as they wear away, are to be screwed up tightly, and the piston is made to pass through the cross-head, and give motion to the piston of a blowing machine.

2d. The rectilinear motion of the piston of a blowing machine is converted into a rotary one, and communicated to a shaft by means of a rod keyed loosely to the end of the piston rod of the blowing machine, and passing through a sliding stuffing-box in the side thereof. The other end of the rod is connected to the crank-pin.

3d. The steam induction and eduction ways, both at the top and bottom of the cylinder, are each worked by two valves fixed on the same spindle, which are constructed of slightly different diameters, so that the pressure to be overcome is that due to the difference in the diameters.

4th. The same principle is proposed to be applied to the construction of valves in the feed-pipes of steam-boilers.

5th. The apparatus for working the dampers consists of a pipe communicating with the boiler, and closed at the top by a valve, which is weighted at less than the safety valve. Above the valve is placed an inverted vessel, which is connected at top to the damper, and is fixed in aquilibrium, with the sides dipping into the water contained in the exterior casing of the steam boiler pipe. This casing is provided with an overflow pipe. It follows that when the valve is opened by the increased pressure of the steam, the inverted vessel will be lifted up, and the dampers partially or wholly closed. When the valve is closed, the inverted vessel will descend into its first position.

Claims. The mode of fixing the cross-head to the piston, so that it may pass through it and give motion to the piston of a blowing machine; also the use of the brasses. The arrangement for converting rectilinear into rotary motion. The mode of working the steam valves. The method of working the feed valves of steam-boilers. The mode of working the dampers.

VENTILATION OF COAL MINES.

Lord Wharncliffe's committee "on accidents in coal mines," in the British House of Lords, attended at the Polytechnic Institution on the 3d instant, to investigate, by experiment, the principle and practicability of high-pressure steam, for the purpose of ventilating coal mines, and to examine into its power for the prevention of the fire-damp explosions. The experiments were made by Dr. Bachoffner, from the steam taken from the great hydrolectic boiler of the institution. They were explained by Mr. Gurney, who has been summoned from Cornwall on the committee, together with Mr. Foster, from Newcastle. The power of the high-pressure steam jets for producing ventilation, was shown to be almost unlimited, and that the largest mine might easily be swept of all fire-damp, or other noxious gasses. The meeting was appointed by their lordships with a view to the better examination of Mr. Foster before the Lords on the subject. Mr. Foster is one of the largest miners in the Newcastle district, and has had the high-pressure steam introduced in Seaton Delaval. His evidence, therefore, is looked to with the greatest interest.

GUTTA-PERCHA TUBING.

A series of experiments have just been concluded at the Birmingham (England) Waterworks, relative to the strength of gutta percha tubing, with a view to its applicability for the conveyance of water. The experiments were made under the direction of Mr. Henry Rofe, engineer, upon tubes of three-quarters of an inch diameter, and one-eighth thick, of gutta percha. These were attached to the iron main, and subjected for two months to a pressure of 200 feet head of water, without, as we are told, being in the slightest degree deteriorated. In order to ascertain, if possible, the maximum strength, one of the tubes was connected with the Water Company's hydraulic proofing pump, the regular load of which is 250 pounds on the square inch. At this point the tube was unaffected, and the pump was worked up to 337 pounds, but, as we are informed, it still remained perfect.

INVENTION FOR THE MANUFACTURE OF STEEL.

The *Practical Mechanics' Journal* furnishes the following description of an invention relating to the process of refining metal, and forcing currents of atmospheric and gaseous air, during the process, so as to convert it into steel; and also to prepare the metal, previous to submitting it to the process of conversion into steel:—

The apparatus consists of the converting furnace, to the tuyere whereof a blast pipe is attached, formed into three passages, provided with valves for regulating the air currents. Two of the passages communicate with two iron receptacles in front of the converting furnace, the center passage passing between them and to the front of the receptacles. These receptacles are provided with gratings, and ash pits beneath, and with covers for closing them.

The process of converting the metal into steel, by this apparatus, consists in allowing the air to pass into the two passages of the blast pipe communicating with the receptacles, such receptacles being filled with charcoal, which is then ignited, and the receptacles closed by means of the covers; the air thus passed through the receptacles is formed into carbonic oxide, and enters the tuyere of the converting furnace, where it is mixed with such a quantity of atmospheric air from the center passage, as may be judged desirable, though the patentee states that a large quantity should generally be avoided. By means of the valves, the quantity of gaseous or atmospheric air can be regulated by the operator. To prepare the metal for the process of conversion, the patentee states, that if it be pig iron, it is to be smelted sufficiently in a cupola furnace, to which is applied the apparatus above described; but if it be wrought iron, a plumbago crucible is used, in which the metal is to be placed, being properly stratified with charcoal or carbonaceous material.

THE SHOE BUSINESS IN LYNN.

Lynn, in Massachusetts, is famed for its manufacture of shoes, and as containing an industrious population, as famous for their liberal opinions, and their great love of liberty. We hope, ere long, to visit that place, for the purpose of gathering up particulars of its industry, with a view of placing it among our series of articles on the "Commercial Cities and Towns in the United States." In the meantime, we give from the *Lynn Pioneer*, a brief statistical account of the extent of the manufacture of shoes in that place:—

The shoe business is the life of Lynn. Only womens', misses', and childrens' shoes, are made here. Engaged in this business, there are of manufacturers, or men who "carry on the business," 89; of cutters, or men who "cut out" the shoes, 175; of men and boys so employed in making shoes, 2,458; of men and boys so employed, but living out of town, 900; of women and girls employed in binding shoes, 4,925; of the same so employed and living out of town, 1,600; making, of employees, an aggregate of 10,058. The number of men and boys employed in making shoes is more than 70 per cent larger now than it was in 1842. The increase in the number of women and girls employed in binding shoes, has, we presume, been correspondingly great. But it should be stated that the shoe business in 1842 was unusually depressed; that much less of it was done during last, than will probably be done during the present year. The number of pairs of shoes made during the last year was 3,540,000 pairs. The cost of the materials of these was $1,535,545; that of making them, $957,030; making the cost of the 3,540,000 pairs of shoes to have been $2,392,575. The cost of making shoes is now about one-sixth less than it was a dozen years ago.

BRITISH TRADE IN METALS.

Returns for 1848 show that 3,788 tons of pig and sheet lead were imported into the United Kingdom, together with 1298 tons of lead ore, and 64 tons of white lead. Export of lead ore, 134 tons, of pig and rolled lead, 4,977 tons, white lead, 1,168 tons, red lead, 842 tons, and pig and sheet lead, 3,747 tons. Copper ore imported, 50,053 tons. Value of copper manufactures imported, £9,200. Copper ore retained for domestic use, 51,307 tons, duty £10,227 net. British copper exported, 13,466 tons. Zinc or spelter imported, 13,529 tons, duty free. Zinc exported, 562 tons, British, and 3,766 tons, foreign.

JOURNAL OF BANKING, CURRENCY, AND FINANCE.

REVENUE OF THE BRITISH POST-OFFICE.

An account showing the gross and net post-office revenue and cost of management for the United Kingdom for the year ending January 5, 1838, and for each subsequent year, excluding from the account, whether of gross revenue or cost of management, any advances that may have been made by the English to the Irish post-office, and advances to the money order office; also disregarding, in the return for each year, any old debts written off, or postage remitted, or any other deductions which relate to previous years:—

Years.	Gross revenue.*	Cost of management.†	Net revenue.	Postage charged on government departments.
1838.....	$2,339,737	£687,313	£1,652,424	£38,528
1839.....	2,346,278	686,768	1,659,509	45,156
1840‡.....	2,390,763	756,999	1,633,764	44,277
1841.....	1,359,466	858,677	500,789	90,761
1842.....	1,499,418	938,169	561,249	113,255
1843.....	1,578,145	977,504	600,641	122,161
1844.....	1,620,967	980,650	640,217	116,503
1845.....	1,705,067	985,110	719,957	109,232
1846.....	1,887,576	1,125,594	761,982	101,191
1847.....	1,963,857	1,138,745	825,112	100,355
1848.....	2,181,016	1,196,520	984,496	121,290
1849.....	2,143,680	§1,403,250	740,429	115,902

* Namely, the gross receipts, after deducting the returns for "refused letters," &c.

† Including all payments out of the revenue in its progress to the exchequer, except advances to the money order office. Of these sums, £10,307 10s. per annum is for pensions, and forms no part of the disbursemenis on account of the service of the post-office.

‡ This year includes one month of the fourpenny rate.

§ This includes a payment of £196,086 5s. 1d. for the conveyance of mails by railway in previous years.

It will be seen that the years ending January 5, 1846 and 1847, differ in certain items from the former returns of those years. This arises from the East India Company's postage having been, in the returns referred to, included both in the "gross revenue" and "postage charged on government department." It is now entirely excluded from the account.

CONDITION OF THE BANKS OF CONNECTICUT.

COMPILED FROM THE BANK COMMISSIONERS' REPORT, MAY, 1849.

It will be seen by tables hereinafter given, that the circulation of banks is less than it was one year since by nearly $400,000. Causes, beyond the control of the banks, have produced this result; and one more prominent, perhaps, than any other, is the par value of their bills in Boston, and the near proximity to it in New York, which is very different with the banks west and south. In consequence of this state of things, the bills of the banks in Connecticut are sought after for remittance to those two great commercial points, especially when money at those points is worth from 10 to 15 per cent per annum.

The system of par redemption in Boston, causes almost the entire circulation of the banks in Connecticut to flow to that point, where it is redeemed by the Suffolk Bank; consequently, funds have to be placed by her banks to meet such redemption, to an equal amount, or dishonor and loss of credit follow. Therefore, the real strength of a bank is for its redemption required at that point. All the banks in the State redeem their entire circulation at Boston, once in about sixty days, except the very small amount redeemed at their counters, and except a portion of those in Fairfield county, who redeem about one-eighth in New York.

The whole amount of banking capital paid in on the 1st of April last, was

$8,985,916 76, (exclusive of the amount in the Winsted Bank,) which will be increased the present year $392,120 by the amount subscribed to the four banks chartered at the last session of the General Assembly, so that the whole amount of banking capital in the State of Connecticut paid in will be $9,378,036 76.

There is about $2,500,000 of chartered capital located in different parts of the State that has not yet been taken up, and which the directors or stockholders now have the right to add to the above amount of $9,378,036 76.

The aggregate circulation and loans of the banks at three different periods of the year ending April 2, 1849, is as follows:—

	Circulation.	Loans.
April 2, 1848	$4,891,265 06	$13,424,653 99
October 1, 1848	4,023,235 06	13,381,093 33
April 1, 1849	4,511,571 06	13,740,591 07

Showing a decrease of circulation between the first two periods above named of $868,030 00, and between the last two, an increase of $488,246 00, and at the last mentioned period $379,094 00 less than April 1, 1848; and showing an increase of loans and discounts, since October 1, 1848, of $359,497 74, and since April 1, 1848, of $315,937 08, which increase is about the same amount as that of capital and additional surplus made the past year.

CONDITION OF THE BANKS IN CONNECTICUT, APRIL 1, 1849.

RESOURCES.

Names.	Specie.	Due from banks.	Due from brokers.	Stocks, bonds, &c.	Bills discounted.
Hartford	$72,744	$85,042	$23,752	$2,094	$1,845,612
Phœnix and branch	59,794	60,629	45,390	.....	2,086,408
Farmers and Mechanics'	46,160	36,427	2,489	8,666	1,055,083
Exchange	31,904	39,513	3,528	8,360	975,178
Connecticut River Co	13,000	13,637	22,064	18,000	362,291
New Haven	21,915	87,306	.....	38,436	488,698
New Haven County	23,219	63,667	65,686	52,239	586,460
City	19,578	86,164	62,526	5,000	578,567
Mechanics'	20,597	70,404	.....	....	511,091
Bridgeport	21,570	97,223	11,000	28,376	344,407
Connecticut and branch	25,191	76,138	23,907	52,419	406,925
Fairfield County	17,841	30,026	.....	37,239	217,814
Stamford	9,774	9,420	21,488	7,331	126,213
Danbury	11,661	11,808	.....	51,713	142,526
Norwich	12,097	19,408	.....	37,192	294,219
Thames	9,517	10,513	.....	5,565	365,177
Merchants'	7,335	17,417	346	.....	302,731
Union	8,414	40,662	.....	.....	142,690
Whaling	7,800	18,473	4,000	29,067	193,643
Stonington	8,579	3,779	.....	.....	102,650
Mystic	5,132	2,130	2,000	.....	101,769
Jewett City	3,736	3,678	.....	4,650	67,221
Middletown	20,765	8,717	18,352	9,158	493,621
Middlesex County	10,661	10,199	16,405	.....	311,136
East Haddam	7,299	1,706	9,675	5,578	130,329
Saybrook	6,405	7,159	13,315	.....	51,178
Tolland County	13,416	22,327	.....	.....	197,894
Thompson	5,546	16,572	.....	20,000	71,695
Windham County	6,570	35,264	.....	.....	100,732
Windham	4,332	12,658	3,000	704	77,457
Meriden	7,422	6,500	.....	.....	219,260
Iron	13,275	42,439	.....	.....	212,328
Waterbury	6,223	20,895	20,297	265	75,082
Manufacturers'	3,675	1,280	16,531	285	59,033
New London	5,006	10,257	.....	.....	193,327
Quinnebaug	7,566	7,851	.....	99,662	250,130
Total	$575,676	$1,087,757	$385,858	$522,010	$13,740,591

LIABILITIES.

Names.	Capital.	Circulation.	Deposits.	Due banks.	Surplus.
Hartford	$1,134,600	$484,011	$216,434	$66,939	$134,038
Phœnix and branch	1,285,600	530,016	281,784	26,181	113,013
Farmers and Mechanics'	545,200	340,378	150,998	28,001	75,387
Exchange	525,000	248,732	257,974	19,010	36,640
Connecticut River Co	250,000	118,343	53,499	927	8,525
New Haven	364,800	136,756	97,746	27,066	12,099
New Haven County	515,675	189,007	65,400	17,055	25,000
City	500,000	172,378	90,375	15,010	24,110
Mechanics'	300,000	153,096	114,372	45,142	18,707
Bridgeport	210,000	207,215	57,627	11,906	29,114
Connecticut and branch	327,100	171,000	81,268	14,276	29,638
Fairfield County	100,000	171,830	19,795	5,381	16,755
Stamford	60,000	86,540	30,244	1,869	5,639
Danbury	89,500	106,267	24,699	2,771	9,997
Norwick	210,000	80,514	52,628	24,056	9,709
Thames	262,400	87,793	45,266	3,474	4,051
Merchants'	191,741	70,853	77,696	4,462	7,158
Quinnebaug	250,000	72,834	46,764	9,885	6,148
Union	100,000	73,970	11,578	2,493	9,000
Whaling	163,750	54,559	23,904	3,770	9,194
New London	150,875	44,487	11,626	57	4,562
Mystic	52,700	46,193	8,622	1,292	7,268
Stonington	59,650	39,354	15,166	1,719	9,173
Jewett City	44,000	34,822	2,961	1,141	2,533
Middletown	369,300	95,784	50,528	8,597	28,061
Middlesex County	221,000	87,789	28,893	2,259	7,432
East Haddam	71,240	52,642	24,262	2,911	8,756
Saybrook	23,650	37,800	17,544	2,234	.....
Windham	60,000	31,717	6,123	142	3,254
Windham County	62,700	74,890	3,578	.....	3,178
Thompson	60,000	47,360	3,503	2,101	3,127
Tolland County	80,800	86,819	45,844	10,181	14,800
Meriden	155,000	66,286	7,459	1,800	2,582
Iron	105,580	123,717	31,698	822	5,652
Waterbury	47,785	48,411	31,036	.....	.....
Manufacturers'	36,270	36,414	11,359	.....	.....
Total	$8,985,916	$4,511,571	$2,100,272	$364,966	$684,315

LONDON BANKERS AND BANKING-HOUSES.

The oldest banking-houses are Child's, at Temple-bar, Hoare's, in Fleet-street, Strahan's, (formerly Snow's,) in the Strand, and Gosling's, Fleet-street. None date earlier than the restoration of Charles II. The original bankers were Goldsmiths, "Goldsmiths that keep running cashes," and their shops were distinguished by signs. Child's was known by "The Marygold," still to be seen where the checks are cashed; Hoare's by "The Golden Bottle, still remaining over the door; Snow's by "The Golden Anchor, to be seen inside; and Gosling's by "The Three Squirrels," still prominent in the iron-work of their windows towards the street. The founder of Child's house was John Backwell, an alderman of the city of London, ruined by the shutting up of the Exchequer in the reign of Charles II. Stone and Martin's, in Lombard-street, is said to have been founded by Sir Thomas Gresham, and the grasshopper sign of the Gresham family was preserved in the banking-house till late in the last century. Of the west-end banking-houses, Drummonds, at Charing-cross, is the oldest; and next to Drummonds, Coutts', in the Strand. The founder of Drummond's obtained his great position by advancing money to the Pretender, and the king's consequent withdrawal led to a rush of the Scottish nobility and gentry with their accounts, and to the ultimate advancement of the bank to its present footing. Coutts' house was founded by George Middleton, and originally stood in St. Martin's-lane, near St. Martin's Church; Coutts removed it to its present site. The great Lord Clarendon, in the reign of Charles II., kept an account at Hoares; Dryden lodged his £50 for the discovery of

the bullies who waylaid and beat him at Child's, at Temple-bar; Pope banked at Drummond's; Lady Mary Wortley Montague at Childs; Gay at Hoare's; Dr. Johnson and Sir Walter Scott at Coutts; and Bishop Percy at Gosling's. The Duke of Wellington banks at Coutts'; the Duke of Sutherland at Drummond's; the Duke of Devonshire at Snow's.

THE LONDON STOCK EXCHANGE.

We are indebted to a London correspondent of the New York *Courier and Enquirer* for the following interesting and, we have no donbt, accurate account of the mode of transacting business, &c., at the London Stock Exchange:—

To all the world, except its own members, the Stock Exchange of London is a forbidden place. The peer of the realm would be as unhesitatingly turned out as the hangman. A stranger may venture as far as the *outer* doors, but if found within the inner portal, all the mischievous jokes that ingenuity can devise will be perpetrated upon him. None but its members know its interior. It is almost the only spot not yet penetrated by the reporters of the public press. Of the accuracy of the following particulars your readers may be certain.

The London Stock Exchange is a place devoted to dealings in British funds, exchequer bills, railway shares, and foreign stocks, and money matters connected therewith. All else is carefully excluded. Each member is strictly forbidden to carry on, directly or indirectly, any other business. The discounting of bills is prohibited. It is, in the truest sense of the word, a Court of Honor, ninety-nine transactions out of every hundred being such as cannot be brought into a court of law, the law refusing, in this country as well as our own, to enforce or recognize "time bargains" in stocks. In other words, the courts of law will call all those transactions, the consummation of which is fixed for the "settling days," so many instances of gambling, and recognize only strict and simple *money transactions.*

As all bargains in public funds, railway shares, and foreign stocks, are considered to be made for settling days, unless they are especially arranged for the contrary, it follows that half the bargains are, in *legal* point of view, null and void. The Stock Exchange being, therefore, a court of honor, and its contracts unenforceable at law, disputes among its members must be referred to its own committee, and their decision is final. This committee is armed with absolute and even irresponsible powers; but, as it exercises them only for the common good, their decision is never cavilled at. The constitution of the Stock Exchange is essentially and necessarily democratic. In elections of the committee each member votes by ballot, and has the right of nomination. But no *administrative* power is vested in the general body of members. The committee form the sole executive. They are elected for one year only, and are so far responsible, in being so frequently referred back to their constituents for censure or approval. On applying for admission to membership, each applicant declares his willingness to submit to all the conditions and regulations which the committee have already established, or may in future promulgate; and, moreover, as each member, every year, (on the 25th of March,) has to renew his application for admission, he is obliged annually to go through the same written form and ceremony, and renew his declaration of "allegiance."

Every expedient that can keep the Stock Exchange select has been adopted. The first step for the applicant for admission is to find some member who will introduce and recommend him to the committee, and who will also engage to pay his liabilities, if needful, to the amount of £300. The applicant must then find two other members who will become his securities for three years, and for £300 each. Thus, then, to the extent of £900 the Stock Exchange are protected in transactions with their new friend. But so determined are they that no imposition shall be pratised that the members require the sureties to say if they have or have not received any collateral security for their guaranties. Until the three years have expired, the names of the new member and the three sureties are suspended in a conspicuous place on the walls, with a star against the names of those who hold collateral security for the information of the House. If one of the sureties declares that he holds no "collateral," and if the new member fails, and the surety receives any indemnity, that indemnity is added to the general fund for the benefit of his creditors. So that, unless secured at the outset, the sureties cannot afterwards be protected at the expense of the creditors. Some of the questions put to the sureties are very significant. "Would you take the applicant's

check for £3,000?" "To what extent would you deal with him *on time?*" "Has he ever been a bankrupt?"

A member may introduce his clerk into the House* with the consent of the committee, but, on so doing, must pay for him the same subscription which he pays for himself, namely, £10 10s. per annum. If the clerk is authorized to transact business for both "money" and "time," or either, his employer is bound by his bargain as strictly as though made by himself. But if any clerk makes a bargain, either for money or time, *in his own name*, or any member transact business with such clerk in his (the clerk's) name, and for his account, they are both liable to expulsion.

A foreigner is not admissible unless he has constantly resided in this country during the five years immediately preceding his application for admission.

No applicant is eligible for admission if he be a *clerk* in the Bank of England, East India House, South Sea House, or, indeed, in any other establishment, public or private.

Five thousand persons are said to be members of the Stock Exchange, and they form a most influential body. A few may be seen who, although in the decline of life, still cling to their former haunts and habits of business, and their is a sprinkling of the bloom of boyhood, undimmed, as yet, by the lust of lucre; but, generally speaking, the men are in the prime of life, and of strikingly fine and intellectual appearance. Around the region of "the House" may be seen the members during the hour of business; and, however the cynical philosopher may sneer at the love of gain, he must be forced to admit that a jury selected from the members of the Stock Exchange would carry, on their appearance, enough to justify any one in entrusting to their verdict either a mere pecuniary affair or the more mighty matter of life and death. Scarcely a trace can be found among them of the glutton or the wine-bibber. Those who hold the scales, and are called upon day by day to estimate and put a positive value on the political events of the hour, dare not approach the subject but with clear heads, and, if possible, unbiased minds; for, though the jobbers *ought* properly to go home at night with an "even book," that is, having neither over-bought nor over-sold, and the broker ought not to be in any way interested on his own account, still neither of these two classes can refrain from "backing" their opinions by occasionally being a "bull" or a "bear." The third class consists of the speculators, who make it their business to operate, and to shift their operations with every turn of the political wind; and very often the price of the public funds fluctuate merely with the combined opinions of a few of these men.

Essentially the Stock Exchange is a place of business, and nothing but business and business matters is to be talked of therein. For this reason it is that the ordinary rules of politeness are suspended, and it is held to be no breach of courtesy, when two persons are speaking together, to join them and listen to their conversation, because it is presumed that they are on the point of striking a bargain together, and, therefore, as it is an open market, perhaps the listener is willing to supply the stock at a much lower price than the proposed seller, or to buy at a higher price than the incipient purchaser. One of the by-laws of the Stock Exchange is, that you are bound to take any one's offer, provided you have *named* the price at which you will deal; and you cannot raise the question of the capability of the other to fulfill his undertaking. If a jobber or broker states his willingness to sell £10,000 consols at 93, he is obliged to conclude the bargain with the first man who offers to take the stock at that price; for the Stock Exchange holds each of its members to be equally honorable and equally trustworthy.

The greatest economist of *time* would be pleased with a visit to this place. Jobbers, who are always willing to buy or sell "at a price," stand on their own particular spot all day long. A broker goes to that corner of the Stock Exchange where the business of the particular stock in which he wishes to deal is generally transacted. He asks of a single jobber the buying and selling prices; in an instant he is surrounded by the whole herd of that class of jobbers. If he finds the price will not allow of his operation being done he retires with closed lips; otherwise, he either effects it at once, or, if the prices are near his limits, he remains hanging about the market until the fluctuations allow him to earn his commission.

Settling days in consols are fixed for once a month, (previous to the great panic of 1847, the time varied from five to seven weeks.) On that day all transactions are closed, and the stock either delivered to the buyer, or a new arrangement made for "carrying it on," for the next account day; and the difference between the contracted price and the price of the settling day paid instanter. One instant of delay and the

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* The Stock Exchange, among its members, is never spoken of as such, but always as "The House."

party is declared a defaulter. He must leave the Stock Exchange, and, if he is a young member, his sureties must pay up the £900.

In shares and foreign stocks the settling days are once a fortnight; and the same method is pursued with regard to them. The settling days are sometimes very heavy; so heavy as to engage the clerks for many previous evenings until past midnight; for every thing must be ready for the settling day at eleven in the morning, and at the same hour the following day, every account must be made up, and the checks for the difference paid. Large in number as their ckecks may be, the whole is effected and settled in a couple of hours. The clerks do it all; they usurp the places of their masters, who for this short time are thrust to the outskirts of the circle like "drones," and do not resume their labor till the busy hive has become quiet.

Quotations for stock are always for amounts over £500; less amounts are not entitled to be quoted. All offers to deal in consols imply an amount of £1,000, unless a different sum is distinctly stated at the time. This prevents a jobber being caught by having an undue amount forced from him or forced upon him.

Defaulters are very leniently treated. It is true that they are liable to immediate expulsion; but if they can produce from their own resources (independently of the £900 security money) one-third of the balance of all losses due from them, they can be re-admitted; provided, of course, that there is nothing else to be alleged against them. A defaulter, however, must, within fourteen days from the date of his failure, deliver to the assignees, or to his creditors, his original books of accounts, and a statement of the sums owing to him, and owned by him in the Stock Exchange at the time of his failure. No member is allowed to carry on the business of a defaulter for the benefit of such defaulter; neither may he transact business with any defaulter before his readmission. One rule is very stringent, and that is that no one may make a *compromise* with any member, on the ground that he is unable to fulfil his engagements, but on such an intimation being given, it must be immediately conveyed to the committee, that the party offering the compromise may be publicly declared a defaulter. Any member conniving at a "private failure," by accepting less than the full amount of his debt without communicating the same to the committee, will be held liable to refund the sum or sums of money, as well as other securities that may have been received from such a defaulter, provided he shall be publicly declared within two years from the time of his compromise.

It is wonderful that, out of so large a number of members, so few are declared defaulters. For several months past, although fluctuations have been great, not one has been declared; although in times of panic sometimes as many as three or four have declared upon a single-settling day. The hours of business are limited from eleven to three o'clock, and any bargain transacted before or after those hours cannot be enforced by the committee. This excellent rule drives the business operations into a very narrow compass; and if it were not for the lazy habits of the west-end people, (who seldom come into the city, no matter what they have to do, until 2 o'clock,) the whole of the transactions might be done between 11 and 3 o'clock, as by far the greater number of them are at present. The morning after a bargain has been effected, the clerk of the jobber and the clerk of the broker compare notes, and check the particulars of the bargain; thus all dispute on the settling day is avoided, and the account can be made out with the certainty that the radical preliminaries are correct. Exchequer bills, are always dealt in at once for prompt payment in *bank notes*, because, being bank notes themselves to a certain extent (inasmuch as they are legal tenders to government for taxes,) they are regarded as being in exclusive peculiar property. All *other* sorts of stock or shares are paid for by checks, which are cashed at the banker's clearing at half-past 3 o'clock in the afternoon. The system of certified or marked checks, does not prevail here. The offer of a marked check would be sufficient to annihilate the credit of any man. The checks are freely drawn in the morning, with the name of the banker or party to whom they are given plainly written across the body of the check; and it is then payable to that banker only. (This is for security against loss or theft.) This is often done for tens of thousands, when perhaps there is not a single thousand in hand; the giver of the checks fully relying upon obtaining as much from other parties as will enable him to meet his own checks at the "clearing," when the whole will be due simultaneously.

American stocks are never dealt in in the London Stock Exchange but privately, most of the business in those stocks being in the hands of two eminent brokers.

HOW TO "ESTIMATE" A BANK CUSTOMER.

The method of estimating a bank customer, as given by Mr. Gilbart (the well known manager of the London and Westminister Bank) in his "*Practice of Banking*," (noticed under the "Book Trade" Department, in the present number of our Magazine,) will commend itself equally to the good sense of bankers in England and the United States:—

"It is of great importance to a banker to have an ample knowledge of the means and transactions of his customers. The customer, when he opens his account, will give him information on this subject. The banker will afterwards get information from his own books. The amount of transactions that his customer passes through his current account, will show the extent of his business. The amount of his daily balance will show if he has much ready cash. The extent and character of the bills he offers for discount, will show if he trusts large amounts to individual houses, and if these are respectable. On the other hand, the bills his customer may accept to other parties, and his payments, will show the class of people with whom he deals, or who are in the habit of giving him credit. But one main source of information is to see the man. This, like other means of information, will sometimes fail; but, generally speaking, the appearance and manners of a man will show his character. Some people always send their clerk to the banker with bills for discount, &c. This is all very well if they want no extraordinary accommodation; but if they ask for anything out of the usual way, the banker had better say that he wishes to see the principal. And if he had a doubt whether his customer was tricky or honest, speculative or prudent, let him be guided by his first impression—we mean the impression produced by his first interview. In nine cases out of ten, the first impression will be found to be correct. It is not necessary to study physiognomy or phrenology, to be able to judge of the character of men with whom we converse upon matters of business."

ST. LOUIS INSURANCE COMPANY.

We learn from an advertisement in the *St. Louis Republican*, that the full amount of the increased capital stock of $200,000, has been subscribed, and that the company will continue business as heretofore, with a capital increased to $300,000. In referring to the advertisement, the *Republican* makes the following statement, which shows that notwithstanding the great fire, the company is in a perfectly sound and safe condition:—

"Such a testimonial of the confidence of our business men in the management of an institution, is, we believe, without a parallel in the United States. The capital of the company, under which it has been in profitable operation for several years, was $100,000. The *great fire* not only annihilated this capital, but it left the company with liabilities to the amount of nearly $100,000. It was necessary that this sum should be made up, and paid, or a forfeiture of the charter was unavoidable. The friends of the company were not long in determining their course. They determined to increase the stock to an amount greatly beyond all aggregate liabilities, and then to place the institution in the same hands that had so trustfully and skillfully managed it. Former customers of the office manifested their confidence in it by taking stock—old stockholders increased their subscriptions, and new men, who had no interest in it, subscribed for stock, and the whole amount of increased stock was taken in one day. We say this statement is particularly creditable to the gentlemen who have so successfully managed the company for years past, and is equally honorable to those who have come forward and subscribed for the stock. That the earnings of the company will justify this codfidence, we make no sort of question. The St. Louis will be, as it has been in former years, one of our most popular and reliable companies, and we anticipate for it an immediate and greatly increased number of friends and customers."

BRITISH IMPORTATION OF GOLD AND SILVER.

Returns have been prepared, exhibiting the total amount of specie imported from foreign countries for the half-year ending the 30th June, by the various lines of royal mail steamers arriving at Southampton. It appears that the West India steamers, for

the six months in question, have brought to Southampton the enormous amount of gold and silver, in dust, bars, coin, &c., to the value of $10,570,655, (or say, in sterling, £2,114,133,) the product of the mines in Mexico, California, Chili, Peru, Bolivia, and other South American states. Of this amount, about $950,000 have been received from California, either direct, or via Valpariso, Lima, &c., at which ports the dust had been melted into bars. The Peninsular and Oriental steamers have brought from Alexandria, during the same six months, gold and silver coin, value, £498,591 sterling, the majority of which has been specie remittances from India, for account of the Hon. East India Company. The Constantinople steamers have brought, within the same time, gold and silver coin valued at £540,000 sterling, and the steamers from Spain and Portugal specie, value, £360,000 sterling; so that the total amount of specie received at Southampton by the several lines of steamers from all parts of the world, from the 1st of January to 30th June, inclusive, reaches £3,512,724 sterling; an amount, which, if consisting entirely of silver, would weigh upwards of 400 tons, and in gold, would weigh nearly 35 tons.

MERCANTILE MISCELLANIES.

COMMERCE AND RESOURCES OF NORTH CAROLINA.

In replying to a business letter from an intelligent citizen of the "Old North State," and a subscriber to our Magazine from the start, we expressed a desire for a paper on the "Commerce and Resources of North Carolina." That we made the request to a gentleman fully competent to the task, will, we think, be sufficiently apparent from the extract of his letter, (not, of course, intended for publication,) which follows:—

* * * * * * *

"For some months past I have had in contemplation the writing of such an article, but have been somewhat deterred from the undertaking, in consequence of the great labor and difficulty attendant on it. There is no State in the Union, whose statistics are so meagre; none in which the difficulty of procuring information necessary to the proper exhibition of the commerce and resources, are greater. With a coast bound with sand-bars, the navigation of rivers obstructed by nature, a large extent of territory with diversified interests, with natural obstructions to the concentration of our commerce, with no emporium to concenter talent, and to give unity of design to enterprise, our commerce, like the rains falling on the lofty summits of our mountains, runs off in every direction to swell each neighboring rivulet, without the possibility of ever uniting again to form a great, grand, and noble current of its own. A large portion of Western and Southwestern North Carolina, finds a market in Columbia and Charleston, South Carolina. The northern, and a portion of the eastern and middle portion, in Richmond, Petersburg, and Norfolk, Virginia, and the production of these sections go to swell the tabular exhibition of the aforesaid States, and are unknown as the products of our own State.

"Our Legislatures and members of Congress have hitherto manifested but little interest in the exhibition of our commerce and resources. With the exception of a single effort, made a great many years ago, we have no general survey of the State. The exploration of our mineral wealth has been left to chance, and individual enterprise, with the limited knowledge we have of the mines confined to their immediate localities, and, for the most part, to those who are practically engaged in them. No Southern State can compare with ours in mineral wealth, and resources for manufacturing. Our forest will supply any possible demand for timber and fuel; we have coal in the greatest abundance, enough to supply the entire demand of our entire country, and which, for a tenth of the cost incurred by the State of Maryland, might be rendered available to the entire coast of the Atlantic shore.

"Information on our commerce will have to be procured not only from our little ports, but from those points in South Carolina and Virginia which draw thither so large a share of our products. If you should not get an article sooner, perhaps I may furnish you one, or a series of them, in the early part of the year 1851. I postpone until that time, with the hope of collecting information from, or through, the next Legislature of

our State; from the members of the next Congress, through the various reports of that body, from the next census, and from such private sources as I may be able to command. An article based on the lights now before me, would be conjectural, and uncertain in a high degree. The last census is a libel on our State. If you have the prospect of an article from any other source, do not rely on me. The undertaking, properly executed, is difficult, laborious, and expensive.

"Everything indicates that a better day is coming; our navigation, and other means of internal transportation, have the prospect of improvement and extension; our agricultural, mining, and manufacturing interests, have received, of late, quite a new impetus.

"Some few years since, I made a tour of the Southern States. I can, with the utmost confidence, say that none of them excelled North Carolina in natural fertility of soil. This I know will sound strange to those abroad, who have heard only of our pine forest, and cypress, and juniper swamps. The swamp country, which is equal to the prairies of the West, covering a large portion of the eastern section of the State, can be reclaimed; much has already been reclaimed. The uplands, and mountain sections, are like those of Virginia and Pennsylvania. Unfortunately, our thoroughfares have given character to the soil of the State. They generally run through the piny section, because there they could be constructed on less cost, of better material, and traverse the State at a shorter distance. If the Great Central Railroad is constructed, for which the prospect is quite fair, with its co-ordinate branches, it will be to North Carolina what "Clinton's Ditch" has been to New York. More than half of our State is dependent on the old four-horse-wagon system for transportation over a distance of from fifty to three or four hundred miles, to find a market. Obstructions exist in all of our rivers, at the beginning of the granite country, as you ascend from the sea-board. If you commence at Weldon, on the Roanoke, in Halifax county, running to Smithfield, in Johnston county, to Fayetteville, and from thence to Wadesboro, in Anson county, you will get pretty nearly the line of obstruction. Many of our streams, after passing the rapids and falls which occur chiefly at the place designated, become navigable for a considerable distance. The line designated will give the country dependent on wagons." Yours, &c., R. R. B.

BREADSTUFFS IN THE UNITED STATES.

A scientific report on this subject by Professor Lewis C. Beck, of Rutgers College, giving the results of some experiments made under the patronage of the Federal Government, has recently been published, and we are indebted (says the Baltimore American) to the polite attention of the author for a copy of it. It is a valuable document on a topic of general interest. The fact that we sent forty-three millions of dollars' worth of food to relieve a famine in Europe in a single year—great as the amount really is—dwindles, nevertheless, into insignificance, when compared with the profuse abundance we enjoy at home. The aggregate amount of the agricultural products of the United States, convertible into breadstuffs, or its substitutes, upon an average of three or four years, is about 900 millions of bushels, of which nearly one half is Indian corn. The quantity of wheat may be put down at 100 millions of bushels. The whole amount of this vast aggregate product required for home consumption does not probably exceed 300 millions. Of course the immense surplus is subject to exportation; so that it is not too much to assume that our country is destined to be the granary of the world.

In view, then, of the magnitude and importance of this great national interest, the Hon. Edmund Burke, late Commissioner of Patents, did well to make it the subject of special scientific research; and he happily selected a gentleman every way qualified for the task, to ascertain how the intrinsic value of the various breadstuffs may be determined, their injury guarded against, and their adulterations detected.

Professor Beck received the appointment in April of last year, and his experiments thus far have been confined to wheat and wheat flour, which constitute the subject of the report before us. Indian corn, and meal, which have now become such important articles of export, will receive due attention in the course of his researches. In entering upon the subject of his present report, his first object was to ascertain the amount of water in different kinds of wheat and flour, for all contain water in greater or lesser quantities. Its amount is greater in cold countries than in warm.

In Alsace from 16 to 20 per cent.

In England, from 14 to 17 per cent.
In United States, from 12 to 14 per cent.
In Africa and Sicily, from 9 to 11 per cent.

This accounts for the fact that the same weight of Southern flour yields more bread than Northern. English wheat yields 13 pounds more to the quarter than Scotch. Alabama flour, it is said, yields 20 per cent more than that of Cincinnati. And in general, American flour, according to the authority of one of the most extensive London bakers, absorbs 8 or 10 per cent more of its own weight of water in being made into bread, than the English. The English grain is fuller and rounder than the American, being in truth, puffed up with moisture. All this is accounted for by temperature. The warmer the country, the more is the water dried out of the grain before it ripens, and hence when made into bread, it absorbs more water again, and is therefore more valuable.

Water also unfits it for *preservation*. The books of a single Inspector in New York city showed that in 1847 he inspected 218,679 barrels of sour and musty flour. In his opinion the loss on these was $250,000. Every year the total loss in the United States from moisture in wheat and flour is estimated at from $3,000,000 to $5,000,000. To remedy this great evil, the grain should be well ripened before harvesting, and well dried before being stored in a good dry granary. Afterwards, in grinding and in transporting, it should be carefully protected from wet, and the flour be kept from exposure to the atmosphere. The best precaution is kiln drying. By this process the wheat and flour are passed over iron plates heated by steam to the boiling point. From each barrel of flour 16 or 17 pounds of water are thus expelled, leaving still 4 or 5 per cent in the flour, an amount too small to do injury. If all the water be expelled, the quality of the flour is deteriorated.

The mode of ascertaining the amount of water in flour is this: take a small sample, say five ounces, and weigh it carefully. Put it in a dry vessel, which should be heated by boiling water. After six or seven hours weigh it carefully until it loses no more weight. Its loss of weight shows the original amount of water.

The next object of Professor Beck was to ascertain the amount of gluten in the various samples of flour. Gluten is an adhesive, pasty mass, and consists of several different principles, though its constitution has not yet been satisfactorily determined. It is chiefly the nutritious portions of the flour. The remaining principles are mostly starch, sugar, and gum. These three latter have been thought not to be nutritious, but this is probably an error. On an average, their relative amount in 100 parts are about as follows:—

KUBANKA WHEAT.

	Average.	The best.
Water,	13	12
Gluten,	12	16
Starch,	67	60
Sugar and gum,	8	9
	100	97

The Professor examined, according to the present report, thirty-three different samples, from different parts of the United States and Europe, and he gives the preference to the Kubanka variety from the south of Russia. There would probably be a prejudice against it in this country, from the natural yellowish hue of its flour and bread.

The process for determining the relative amounts of gluten, starch, sugar and gum is this: put a few ounces of flour carefully weighed in a cotton or linen cloth. Pour cold water upon it and work up the dough with the fingers. All except the gluten strains through the cloth. This is then dried and weighed.

The gum and sugar becomes dissolved in the water, but the starch settles at the bottom of the vessel. The water is poured off and the starch is thus obtained, and may be weighed. The water is next evaporated, and the gum and sugar also obtained in a dry state for weighing. This is not a perfect method—other methods more complicated give different results; but this is sufficiently accurate in a practical way for ascertaining the *relative values* of different specimens.

The report contains some valuable remarks on agriculture in general. The inquiry is not simply how productive a field may be made, however important that may be, but concerns also the *cost* of such production. A man may astonish the country by the great abundance of his crops, and yet become bankrupt with his great returns—

simply because they cannot repay their cost. The questions therefore of economy of measures, and economy of treatment, are of the first importance. It should be known also that wheat raised on a rich soil is more nutritious, taking the same quantity, than that raised in poor ground. We hope these inquiries will be continued without delay. As yet, after so few months' labor, they are merely preliminary. Professor Beck has given abundant proof of his ability to pursue the subject in his noble report on the mineralogy of New York, and in his valuable works on chemistry and botany; and we may reasonably anticipate that his researches in organic analysis will be entitled to a place with those of Professor Horsford of Cambridge, or of Professor Norton of Yale.

"GLORIFYING GOD IN BUSINESS."

We transferred to the pages of the *Merchants' Magazine* for June, 1849, (page 682, Vol. XX.,) a brief paper from the "*Independent*," (one of the ablest religious journals published in this country,) on the subject of integrity in business, remarking, at the time, that "a religion that fails to form honest, upright men—men whose word is as good as their bond—may, in the popular phraseology of the time, be very orthodox, but certainly not very Christian, in the general acceptation of that honored name." We now find in the *Evangelist*, another religious journal, representing a branch of the Presbyterian Church, an article with the above title, which we commend to the serious consideration of men in business, "whose reverance for the formalities of the Church and and its theological dogmas, is so large in its development as to leave little or no space for a scrupulous conscientiousness in their mercantile transactions." We shall not, we trust, be charged with infidelity, in expressing it as a decided and long-standing conviction, that we have more fear of *doing* wrong, than of believing wrong. Indeed, it will, we think, generelly be conceded, that those who do right, will be the most likely to acquire soundness of faith. We do not exactly like the title given by the Evangelist to the article which we copy from that journal. We are not so vain in our conceits, as to place much confidence in our ability to glorify God *much*, in our best and most successful endeavors to do good. But the principles laid down in the extract, are worthy of all acceptation, and we can assure our readers that the practice of such maxims, will not only be most likely to secure the highest approbation of the good man—a peace of conscience—but all the success in business that is worth securing:—

Business must be pursued honestly. And in determining the honesty of any and every transaction, the Christian must not be governed by the defective and ever-varying standards of men. He must have a perfect standard, and one adapted to all times, and places, and circumstances. Such an one is furnished him in the great precept of his Master, "whatsoever ye would that men should do to you, do ye even so to them." Here is the rule by which the Christian who would glorify God, must try every question of honesty and right.

We must be governed in business by the great law of benevolence. We must not only be just to others, sacredly respecting their rights, but also benevolent, seeking their good. "Look not every man on his own things, (only,) but every man also on the things of others." Here is a point where the Christian must ponder the injunction, "Be not conformed to the world." The laws of trade, the common maxims and principles which govern business are all selfish; "Look out for number one," is the common law of the business world. But to seek the good of others equally with his own, must be the aim of the Christian in business as in everything else.

He must be diligent in business, while, at the same time, he must not become absorbed in business. He must preserve that difficult equilibrium enjoined by the apostle, "Diligent in business, fervent in spirit, serving the Lord."

He must have a sacred regard for the fulfillment of all his engagements. The word of the Christian ought to be as good as the bond of the Rothschilds, and his representation of any commodity as reliable as the certificate of a sworn inspector.

He must keep an argus-eyed vigilance over his feelings towards others, who are his competitors in the same calling. Too careful he cannot be to suppress every feeling of envy and jealousy, and especially to guard against the utterance of words which will betray to the world a heart still partially under the dominion of selfishness.

While the Christian practices prudence and economy in his business, he must be careful that he never suffers these qualities to degenerate into meanness and parsimony. He must never become notorious as a "close dealer," a stickler for the "uttermost farthing." He must also frequently yield his own rights, and submit to wrong, as enjoined by Christ in Matthew 5, 38.

The principal share of the intercourse of the Christian with the world, is in business. It is there that he is watched. The world does not go into his closet, or his family circle, in the prayer-meeting, or the house of God on the Sabbath, to read the "living epistle," but it reads him in all the places of business, trade and commerce. It does not listen to his prayers, or his exhortations, or his solemn or joyful songs, but it judges of the spirituality and power of his religion by his words and actions in the every-day pursuits of life. It does not go to the subscription books of our great societies, to judge of the benevolence of that gospel he has sworn to exemplify and adorn, but to his daily life in the world, to his treatment of his fellow-men, with whom he is brought into daily conflict in business. It must be obvious, then, that if God is not glorified by the Christian in business, he will not be glorified by him at all—that if the great principles of the gospel are excluded from business life, the world must be without a living exhibition of their superiority and power.

GROWTH OF COTTON IN INDIA.

The question as to the possibility of a successful cultivation of American cotton in India has recently formed the subject of an interesting report by Mr. Robert Wight, of Madras. The American cotton produces a raw material yielding about 8 per cent more of the marketable article (clean cotton) than the indigenous plant, and that again returning a higher price by at least 20 per cent; but there are two alleged obstacles to its growth which are represented to be insurmountable. The first is the excessive heat of the climate, and the second its extreme dryness, the latter difficulty being such as to render the cultivation impossible except in such places as partake of the rains of both monsoons. To ascertain the value of these objections, Mr. Wight despatched circulars over a wide extent of country, requesting parties to submit the matter to experiment by sowing portions of seed with the first rains following the hot season, and communicating the result, and he has thus been enabled to classify sufficient facts, to suggest some general rules of easy application to practice, which he believes will be found to insure success as certain and uniform with the American cotton as now attends the indigenous kinds. As regards the alleged excess of heat, Mr. Wight shows by a comparative table of monthly mean temperature that the cotton-growing season in India, namely, from September to April, is actually some degrees colder than that in Mississippi, which is from April to November, and that the thing to be contended with would be rather a deficiency than an excess of heat. With respect to the evils of drought, also, he ascertained not only that while cotton which was sown in April so as to partake of both monsoons, was injured or altogether lost by the rains in October, when it was just ready to open, fields sown in August, after the first monsoon, which came into pick in November, yielded good crops, but also that, as compared with Florida, a cotton-growing country, the monthly mean falls of rain show Madras to be much the most humid. The real difficulty to be met consists, Mr. Wight contends, neither in heat nor drought, but in the fact that while Mississippi enjoys a rising temperature during the growing season, in India the reverse is the case. It is to this point, therefore, that he directs attention; and the course that he suggests is simply as follows:—

"The mean temperature of Madras at the beginning of September, is 84 deg., and at the end of October it is still as high as 81 deg. If the sowing is effected between the middle of August and middle of September, the plant will be grown and sufficiently strong to bear the cold weather of November and December; while there is reason to believe that the cold of these months will only so far retard the maturation of the crop as to prevent its coming to perfect maturity before the middle of January, when, though the nights are cold, causing a low mean temperature, the days are bright, warm, and dry, well suited to commencing the harvest, which will last through three or four months.

"By following this plan as closely as the course of the seasons will permit, it is my firm belief there is scarcely a field on which water does not lodge so as to become flooded after every fall of rain in any part of the Carnatic (watered by the north-east monsoon) on which, with due attention to agricultural management, Mexican cotton

may not be as successfully grown as the indigenous now is. Soils as well as seasons vary; some will be found more and some less productive, and a few where the plant will not thrive under any treatment, but such cases do not invalidate the correctness of the general principle as regards the fitness of our climate for its culture."

In conclusion, Mr. Wight points out the periods which, in his opinion, would be the most suitable for obtaining similar conditions of season in Calcutta, Bombay, Ceylon, and elsewhere. He also cites several cases where, by having, as in Egypt, recourse to irrigation, some of his correspondents have succeeded in obtaining a perfectly satisfactory crop of American cotton, when the seed, instead of being sown in September, was sown in January, so as to mature during the hottest period of the year, a rising instead of a falling temperature being thus obtained for it during the period of its growth.

THE DRUG AND MEDICINE TRADE.

ADULTERATED MEDICINES.

The New York Journal of Medicine, for July, in addition to a great variety of articles, chiefly interesting to the medical profession, contains the elaborate report of Dr. M. J. Bailey, "on the practical operation of the law relating to the importation of adulterated and spurious drugs, medicines, &c.," which was read before the New York Academy of Medicine, June 6, 1849, and published by order of the Academy.

This report states some curious results. Over 90,000 lbs. of drugs of various kinds have been rejected since the law took effect, July 12, 1848. Of these 34,000 lbs. were included under the comprehensive title of *Peruvian bark*—16,343 lbs. rhubarb root, 11,707 lbs. Jalap root, about 2,000 lbs. senna, and about 15,000 lbs. of other drugs.

Dr. Bailey says that "the agitation of the bill which preceded the passage of the law, had its effect abroad, and the supply of adulterated drugs from foreign markets has greatly decreased. The domestic supply, however, is rather increased."

"Within the last month or two," says the Doctor, "sulphate of quinine, in considerable quantities, bearing the label of Rosengarten and Denis, Philadelphia, has been found in market adulterated to the extent of some twenty to twenty-five per cent. The same may be said of quinine bearing the labels of the London Alkaloid Company, London—likewise that bearing the label of Pelletier, Delondre & Levailant, Paris.

"Now, these frauds were perpetrated by our own people, or among our own people, and after the article, too, had come into the hands of the purchaser. The manufacturers sent them forth pure, and had nothing to do with the sophistication. Each of the firms named stand too high, and deservedly so, to warrant even a suspicion of such unpardonable baseness.

"The material used for the adulteration of the quinine was found, on analysis, to be *mannite* and *sulphate of barytes*, in about equal weights. The latter article has long been used for this purpose, but not until lately has *mannite* been detected in the sulphate of quinine. It seems to have been ingeniously substituted for salicine, and a somewhat similar substance prepared from the poplar bark, which articles have heretofore been extensively used for like purposes.

"The ingenuity consists in the fact, that it is much more difficult to detect the adulterations when effected by the admixture of *mannite*, than when by the admixture of salicine, &c., while the former can be furnished for less than one-fourth of the latter.

"I have likewise procured, and have now in my possession, a sample of French sulphate of morphine, adulterated by the admixture of some thirty per cent of *amygdaline*, an article which, in this combination, defies all the ordinary tests for its detection; and which, like the mannite in the quinine above mentioned, can only be found and distinctly characterized in the mother water after the solution and re-crystalization of the true saline portion of the sophisticated compound."

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"For some years past, an extensive chemical establishment has been in operation at Brussels, in Belgium, built up at great expense and care, and expressly designed for the manufacture, on a large scale, of imitations of all the most important foreign chemical preparations used in medicine; while, at the same time, an agent was travelling in this country, making sales, and soliciting orders in all the principal towns on our sea-board. This personage is no stranger to me, as I had to examine and pass his murderous wares through the custom-house in large quantities, until Congress, in en-

acting the present righteous sanitary measure, gave me the power to reject them. The articles were prepared and put up with consummate skill and neatness; and the imitation was so perfect, that it was impossible for the unsuspecting purchaser to distinguish them from the genuine, notwithstanding that in some instances they did not contain over five per cent of the substance represented by the label. The only Christian act that, as far as I am aware, the agent performed while among us, was to sound the alarm in season; for, since the law went into effect at this port, not a single package from that establishment has been presented for entry; but I regret to say that, if I am correctly informed, one, if not more, of the persons formerly connected with the Brussels firm, are now in the country, engaged, to some extent, in the same iniquitous business; hence the ingenious adulterations before spoken of. I imagine, however, from certain proceedings which have been instituted, that their career among us will not be of long duration."

The doctor thinks that the business of drug-grinding and powdering, also requires a searching reform. He says that all sorts of incongruous articles are mixed together at the mill, producing, sometimes, fatal combinations. For the purpose of detecting and suppressing this system of domestic fraud, he suggests what seems to be a very feasible procedure.

"That the National Medical Association, at their next meeting, should appoint a committee, composed of two or more from each State, whose duty it shall be to closely scrutinize powdered drugs, and all other medicinal preparations found on sale throughout the country; and of those suspected, let them purchase small quantities, and subject the same to analysis; and if they prove to be of inferior strength, or to have been fraudulently prepared, let the fraud be promptly exposed through the columns of our numerous medical and other journals; and let the committee report all particulars at the next annual meeting of the association.

"This course will not only bring public opinion to bear upon the subject, which sometimes proves all-powerful, but what is of great importance, will place the profession in the possession of such facts and data, as will be absolutely indispensable to insure success, should they, as a last resort, for the purpose of entirely eradicating the evil, be compelled to make a united appeal to the different State Legislatures of the Union for the enactment of such laws, penal or otherwise, as may be deemed most judicious, and at the same time most effective. I am inclined to believe that a movement of the kind would be attended with the most beneficial results. Very few wholesale and jobbing drug-houses, with a knowledge of such a *surveillance* over them, would be apt, in my opinion, to risk their reputation and the success of their business by sending forth from their establishments spurious and adulterated medicines, with an almost moral certainty of the fraud being exposed and fastened upon them. The same fear of detection and exposure at the sacrifice of their business, would induce the country dealers to order no articles of medicine from the principal markets but such as they could guarantee as *genuine* to their customers. Furthermore, under such a *regime*, faithfully administered, the *demand* for adulterations and worthless medicines would cease, and, consequently, their manufacture."

LEARNING, WITH BUSINESS ACCOMPLISHMENTS.

A Scotch paper remarks upon the fact, that among the numerous candidates for the office of a librarian in Edinburg, made vacant by the resignation of Dr. Irving, is Mr. Samuel Halkett, a gentleman who is said to have acquired an extensive knowledge of philosophy, and can not only read and speak most of the living languages of Europe, but has a profound acquaintance with the Eastern tongues, including Hebrew and Arabic, while his translation of scientific papers in Swedish, Norwegian, and Danish, have been much appreciated.

The remarkable circumstance in the case is the fact that Mr. Halkett has been all his life engaged as a woolen draper, of the house of Harrison and Halkett. The *Merchants' Gazette* refers to this case as an example which may be advantageously imitated by others whose main occupation is in the line of mercantile enterprise. We greatly need the particular kind of influence which men combining commercial pursuits with literary accomplishments could bring to bear upon this city and country. We too often have to lament that men eminent as merchants, possessing wealth and power in the community, are yet without those elegant tastes which letters would impart, and which would render them shining lights in society. We have hundreds of merchants capable, if so inclined, of endowing a public library; but how few of them

would be competent to select the volumes to form it, or to discharge the duties of librarian.

The tendency of mere money getting is to contract the mind, and render the man harsh, hard, and illiberal. It is always desirable, therefore, to connect with mercantile pursuits those habits of thought and reading which will counteract that tendency. The more the merchant engages in business, the more desirable is it that he should give a portion of his thoughts to elegant art and literature. These will accompany and cheer him when the advance of life admonishes him to withdraw from business, and be a source of incalculable enjoyment to him when otherwise time would hang heavily on his hands. They will qualify him to prompt and direct those public measures which tend to the beauty and glory of the city and the elevation of society. See how the Roscoes and Rogerses of Liverpool have added to the glory of their city. How largely is London indebted to her accomplished merchants for her fame and magnificence!

DANIEL AYER, AN HONEST DEBTOR.

It affords us pleasure to record in the pages of the *Merchants' Magazine*, another instance of honorable conduct on the part of a debtor, who, being *legally* discharged from his indebtedness, after years of industry and self-denial, obtains the means of, and the disposition to, discharge his *moral* obligations. With a community of such men, all laws for the collection of debts would become a dead letter.

Mr. Daniel Ayer, of Lowell, who failed some years since, and received a discharge from his creditors, recently called them together at his house, gave them an elegant supper, and paid their claims in full, principal and interest. The money he started with the second time, was obtained by his wife, who sold the exempted furniture for $50. The most mysterious part of the business is, that Mr. Ayer says that his family expenses, since that time, have been but "about $300 per year, as I and my family have boarded out since my failure."

Hon. Tappan Wentworth, in behalf of the creditors, with appropriate remarks, presented him with a very neat silver pitcher, upon which was the following inscription:

"Presented to Daniel Ayer, on the 28th day of May, 1849, by Daniel West, Joshua Stetson, David Paige, Josiah E. Short, J. P. Jewett, John G. Moore, and thirty-eight others, his creditors of 1844, to whom he has paid his debts in full, out of his *subsequent* earnings, to the amount of over $6,000, though he was before honorably discharged therefrom."

HANGING ARTICLES AT SHOP DOORS.

We notice in a London paper that several linen drapers and others were fined 20*s.* and costs for the offense of hanging out articles for show in front of their stores. The court admonished the defendants in strong terms, and observed that it was too bad that the time of the magistrates should be wasted, and the money of the corporation expended, which ought to go to other purposes, in order to prevent little children from stealing property from shop doors. Day after day he was committing children for such offenses, and he was determined to enforce the fine against all shopkeepers so offending, until the evil was done away with.

The same practice of displaying goods is among the nuisances of New York, and is carried to such an extent in some cases that it may well be doubted whether the stock of goods outside the shop is not better than the stock within.

That the effect of thus exposing goods is to tempt individuals of weak principles and urgent wants to steal, is manifest from the frequent instances actually and constantly occurring. Some of them are detected and complained of, but probably a much larger number are never found out.

When we consider how many there are in a city like New York who, while they are desperately poor and needy, are almost totally without a moral sense or conscience, and have never felt the restraining influence of good example and careful instruction, is it to be wondered at if the opportunity were offered them to steal a pair of stockings, or a shawl, or a piece of cloth, and they saw a chance to do it without being detected, that they would yield to the temptation, and scarcely feel that they had done a wrong thing.

Instead of sympathizing with the losses of such shopkeepers we should join with

the English judge in condemning and fining them for spreading traps and temptation in the way of the ignorant and weak-minded. There is no estimating the number whose first departure from the path of rectitude may be owing to temptations thus spread before them. Perhaps the best way to remedy the practice would be to deny shopkeepers any redress at law for the loss of goods from the outside of their stores. On some terms a nuisance with such decided evil tendencies should be abated.

There is another consideration not unworthy of thought, and that is, the great quantity of goods which must be faded and damaged by such exposure. Look at the stores the whole length of the Bowery and Chatham-street, in Bleecker-street on the North River side, and a great many others, and it must be evident at a glance that a great destruction of goods is constantly going on. Somebody must bear this loss. These goods must be put of on anybody who can be wheedled into buying them, and here is another temptation.

And after all, what is the advantage of the practice we are condemning? Who gains by it, when all hang out alike? Just so soon as all do it, no one is benefitted by it.—*Merchants' Gazette.*

EXCERPTS FOR BUSINESS MEN:

OR, THOUGHTS AND OBSERVATIONS ON BUSINESS, FROM "ACTON."

Good and Ill Effects of Business. "Business," says a celebrated writer, "is the salt of life." Nevertheless it is a death potion to many. Whole hecatombs of victims fall daily under the perilous and burdensome weight of its cares, its responsibilities, and its reverses.

To conduct a great business with permanent success, requires adequate, and even remarkable mental and physical qualifications, a strong and active mind with good practical common sense, and a sound and vigorous constitution. It exacts powers of thought and capabilities of endurance which are not to be expected in the feeble and inefficient, the reckless or inactive.

Under every advantage, the difficulties and dangers may prove formidable and fatal. But on the other hand, business is a fine and healthful stimulus, since they who abandon all occupation are frequently the victims of ennui and mental agony, and become discontented, captious, frivolous, and unhappy, if not worthless. They lack that *salt of life*, which communicates a wholesome and seasonable flavor to everything, and is as necessary to intellectual support as the most useful and indispensable of all condiments is to bodily sustenance. Indolence has no pleasures like activity; and he who becomes a slave to luxury and ease, repines in secret over the animating ardor and vigorous enterprises of the past.

Want of employment is the most irksome of all wants, and is often more penal and severe than any labor.

> "He saps his goodly strength *in toils* which yield not
> Health like the chase, nor glory like the war;"

even the chase after distinction and wealth, and that kind of war and strife which are met with in the zealous and busy ranks of industry and competition.

Success in Business. If we were to consult the annals of commercial life, we should find that, in most instances, the men who have been distinguished for success in business are of the same stamp as those who have been eminent in the walks of literature and science. They have been characterized by self-denying habits, by simple tastes, and by unpretending manners; whilst the bold, the vain, the presumptuous and the reckless, have done immense mischief to themselves and others in the departments of trade, dissevering the bonds of confidence and good feeling, and often scattering havoc and ruin around them. The same principles and motives of action prevail in the good, the wise, and the prudent among all sorts of men. It is that wisdom which is unpretending and boasteth not, and that quiet sort of penetration and sagacity which is little exposed to self-flatteries and delusions, which are often more injurious and ruinous than all the worldly artifices and deceptions which are practised upon us.

A Poor Business. A needy fellow once approached Louis XIV., and implored alms of him. "What business do you follow?" inquired the king. "May it please your majesty," replied the supplicant, "I am a maker of epigrams." "No wonder, then," observed the monarch, "that you are poor, you follow a poor trade."

THE BOOK TRADE.

1.—*A Practical Treatise on Banking.* By JAMES WILLIAM GILBART, Esq., F. R. S., General Manager of the London and Westminster Bank. Fifth edition. 2 vols. London: Longman & Co.

This work, although reviewed in the leading British journals, has not reached us. It is spoken of by the British reviews in terms of high commendation; and, judging from the former labors of the distinguished author, in this department of literature, as well as from the extracts quoted in the reviews, we anticipate a work of great value and interest. A brief extract from a review in the London *Atlas* must suffice our present purpose of directing the attention of our bankers and merchants to Mr. Gilbart's work:

"Mr. Gilbart has long been known as an able writer on banking affairs, and as a successful manager of one of the largest joint-stock banks in the kingdom. The first edition of the present work was published by him so long ago as 1827, and four editions have been exhausted since that time. The present work, however, differs materially from all its predecessors. It is so much enlarged, and the information it contains so far exceed that of the previous editions, that it is, in fact, quite a new work. During the last few years many important changes have been introduced into our monetary system, and the discussion of the various questions connected with these alterations, gives a new and very interesting character to the present volume, and renders them important, not only to the banker, but to every commercial man, and to every one desirous of knowing something of a matter which, Sir Robert Peel says, 'enters into every transaction of which money forms a part.'

"A work of this kind cannot fail of being interesting to a banker, who must derive from it most valuable information relative to the proper conduct of his business; but it is even more instructive to a mercantile man, or to one who desires to know how the ramified and wonderful banking operations of this country are carried on. Mr. Gilbart has the art of writing on business matters in so pleasing a style that even his description of a 'bank ledger' becomes interesting, and he mixes in his directions to bankers so much profitable information for the guidance of all men of business, that we forget while we are reading the work that it is strictly a professional one."

2.—*Sermons by the Late William B. O. Peabody, D. D., with a Memoir.* By his Brother. 12mo., pp. 393. Boston: B. H. Greene.

We prize this volume very highly, because it contains a beautiful and truthful memoir of the life and character of an early and kind friend, whose councils have shed over our being an influence that we would fain believe has not been altogether inoperative in the formation of our character. We doubt not but that there are many who will sympathize in this statement; for no one ever held communion with the pure and gentle spirit of our departed friend, without reaping a choice harvest of happy reminiscences. The memoir, which occupies about one-third of the volume, down to the last year of his life, was prepared by his brother, whose singular resemblance in mind, character, and external appearance, was often the cause of agreeable surprise. While the survivor was writing this memoir of his recently deceased brother, he was suddenly called to join him in the spirit world; so that the volume contains some of the choisest sermons of the one, and an affectionate biography of their author from the pen of the other; thus constituting a sacred memorial of both, prepared under the most affecting and impressive circumstances. Dr. Peabody was an elegant scholar, and brilliant writer; and, besides performing, with affectionate fidelity, pastorial duties in a religious society, he found time to contribute to the pages of the North American Review, the Christian Examiner, and other leading journals. In this department of literature, he gained high distinction, and we earnestly hope that the miscellaneous papers thus given to the press, will appear in another volume of selections from his literary remains.

3.—*The American Fruit Book: containing Directions for Raising, Propagating, and Managing Fruit Trees, Shrubs, and Plants, with Descriptions of the best Varieties of Fruit, including New and Valuable Kinds. Embellished and Illustrated with numerous Engravings of Fruits, Trees, Insects, Grafting, Budding, Training, &c.* By S. W. COLE, editor of the New England Farmer, etc. 18mo., pp. 228. Boston: John P. Jewett.

The title of this manual indicates with sufficient precision its contents and its objects. In order to adapt it to the wants and the means of every family who would cultivate successfully a single tree, shrub, or plant, the author has condensed it from a collection of materials sufficient for several volumes, and given the substance of the whole. The character of the author, as a writer in this department of literature, and his means of observation, would lead us to place confidence in the reliability of the information here embodied.

4.—*Republicanism of Christianity; or, True Liberty, as exhibited in the Life, Precepts, and Early Desciples of the Great Redeemer.* By E. L. Magoon, author of "Proverbs for the People," "Living Orators of America," etc. 12mo., pp. 422. Boston: Gould, Kendall & Lincoln.

The author of this work belongs to a large and increasing class of writers and thinkers, eminently the product of the present century, not inaptly denominated the "men of progress," who have the courage to speak and write with a free tongue and a bold hand. The concise dedication of the present volume, "to all who hate tyranny, revere humanity, believe in progress, and follow Christ," indicates the character of the work, and the aims of the author, as plainly as an inscription more elaborate could do. The author owns his creed in a brief formula as follows:—1st. "He believes in Jesus Christ. 2d. He believes in no one else, as having the slightest authority over the personal freedom and religious rights of mankind." The work is divided into three parts. 1st. The Republican Character of Jesus Christ. 2d. The Republican Constitution of the Christian Church. 3d. The Republican Influence of the Christian Doctrine. In the first part Mr. Magoon portrays with the rhetoric of truth, the human as well as the divine character of Christ, viewing him at five different stages of his progressive work —as an infant, a youth, a man, a preacher, &c. In the second part he enters into an examination touching the character of the primitive church, and maintains that Jesus Christ, eighteen centuries ago, gave our race a perfect model of republicanism. In the third part, promises laid on the character of Christ, and illustrated in the constitution of the primitive church, are applied to existing evils, showing the legitimate influence of Christian doctrine. With Mr. Magoon, Christianity appears as the Solace of the Obscure—the Patron of the Aspiring—the Fortifier of the Weak—the Deliverer of the Oppressed—and the Redeemer of the Sacrificed. We heartily commend the work to all who believe in the Unity and Progress of the Race, and in that heavenly doctrine of Christianity that teaches its Divine Origin and Brotherhood.

5.—*I. Mitchell's New Travelers' Guide throughout the United States. II. Mitchell's Guide to California.* Philadelphia: Thomas, Copperthwait & Co.

The first volume contains the principal cities, towns, &c., alphabetically arranged; together with the railroad, stage, steamboat, and canal routes, with the distances, in miles, from place to place, and a variety of other information of the utmost importance to the traveler. It is illustrated with a well-executed map. The second volume furnishes a comprehensive description of Oregon and California, embracing an account of the gold regions, with descriptions of the various kinds of gold, and the methods of testing its genuineness. It is also accompanied with a new and correct map of the Oregon and California territories. They are done up in a neat and compact form for the pocket, and furnish a large amount of just that kind of information that the traveler and emigrant requires.

6.—*Historical Sketch of the Second War between the United States and Great Britain.* By C. J. Ingersoll. Philadelphia: Lea & Blanchard.

The first part of this work was published a year or two ago. This volume comprises 317 pages of double columns, and embraces the events of 1814. Why it was not printed to correspond with the first volume, we do not understand. A variety of other matter, besides the war, are treated of, such as the Bank of the United States, the history of which institution is traced to Biddle's downfall, the land-bill, Clay, Webster, J. Q. Adams, down to the time of his death, the architecture of public buildings —in fact, almost every subject which has attracted Mr. Ingersoll's attention during his long term in Congress. It is a perfect hodge-podge, or memorandum book of political gossip, and comprises many incidents and personal anecdotes, which serve to illustrate its character. It is written in a very careless style, without much method or dignity. The sentences are very long, and very much involved; so much so, as to make it often difficult to get at the meaning. In fact, we never remember to have seen anything more liable to criticism on this score. The account of the capture of Washington and the flight of Mrs. Madison furnishes many facts hitherto but little known, and is the most interesting part of the book.

7.—*A Lift for the Lazy.* 12mo., pp. 195. New York: George P. Putnam.

This little volume contains a collection of maxims, anecdotes, and scraps, that would probably furnish a "lazy" man, with a tolerable memory, information enough for two or three "table talks." The volume is "got up" with Mr. Putnam's uniformly good taste.

8.—*Two Lectures on the Connection between the Biblical and Physical History of Man.* Delivered by Invitation from the Chair of Political Economy, &c., of the Louisiana University, in December, 1848. By JOSIAH C. NOTT, M. D., of Mobile, Alabama. 8vo., pp. 146. New York: Bartlett & Welferd.

This work certainly furnishes a learned and ingenious discussion of an interesting topic, in which the author attempts to show, from "a dispassionate investigation, that the Bible affords a much stronger array of facts in favor of the *diversity*, than the *unity* of species." Although we should differ with our author in regard to the *diversity* of the race, believing, as we do, in its *unity*, we heartily concur with him when he says, "Man can *invent* nothing in science or religion but falsehood, and all the truths which he *discovers*, are but facts and laws which have emenated from the Creator. All science, therefore, may be regarded as a *revelation* from Him; and though newly decreed laws or facts in nature, may conflict with religious *errors*, which have been written and preached for centuries, they never can conflict with religious *truth*." We must confess that the *unity* of the race is a favorite theory with us, and one that we should be quite loath to part with, although we are as desirous of embracing "every truth which men of science have the courage to prove." The *unity* of the human race seems to be, not only the teaching of the Bible, but of pure reason. That this *unity* exists in *diversity*, or *variety*, we are willing to admit—it is, indeed, in our judgment, a self-evident fact. But this is not the place to enter into a discussion of the question. We do not, however, undervalue the labors of our learned cotemporary, on account of this difference of opinion, but heartily thank him for his able and candid investigation of the subject.

9.—*A History of American Baptist Missions in Asia, Africa, Europe, and North America.* By WILLIAM GAMMELL, A. M., Professor in Brown University. With Maps and an Appendix. 12mo., pp. 359. Boston: Gould, Kendall & Lincoln.

Undertaken at the request of the Executive Committee of the "American Baptist Missionary Union," it is designed to narrate the origin and progress of the several missions commenced and sustained by the agency of that association. It is, however, a history of the missions rather than of the society—by which they are conducted—of the colonies which have been planted on distant shores, rather than of the government by whose agency they were commenced. The subject relates to many different countries and races of mankind, and comprises the personal adventures and philanthropic labors of a large number of individuals who have engaged in the enterprise, with a zeal and an energy worthy of all praise. It evinces no ordinary degree of industry, research, and skill, and exhibits the prominent facts in the history of the Baptist Missions in a clear and comprehensive manner. Some of them, as well remarked in the certificates of the Rev. Drs. Cone, Sharp, and Chase, which prefaces the work, in power to awaken the heart, could scarcely be surpassed by fiction, while others are full of instruction, "presenting the rich fruits of varied experience in impressive tones of Christian love and admonition."

10.—*American Biographical Panorama.* By WILLIAM HUNT. 8vo., pp. 480. Joel Munsell.

It is the design of the present volume to present a sort of panorama of the most distinguished individuals who have appeared in the country, and who have figured in the various departments of pursuit, but especially as public men, and upon the arena of politics. We have, accordingly, here presented comprehensive but brief biographical sketches of those individuals, illustrated with wood-cuts, showing their personal appearance. Some of the sketches are improved by new information, which has been carefully collected, and which will not elsewhere be found. As a comprehensive compendium of American biography, it is of considerable value, and will, doubtless, be highly appreciated.

11.—*History of Julius Cæsar.* By JACOB ABBOTT. With engravings. 18mo., pp. 278. New York: Harper & Brothers.

We have received another of the author's admirable series of histories. The present volume communicates, in a singularly clear and beautifully transparent style, the prominent particulars in the life and times of Julius Cæsar, as is important for the general reader to possess. The moral lessons deduced from the events described, and the character delineated, is happily adapted to the spirit and genius of the present time. This, and every preceding number of the series, will alike interest and instruct persons of any age.

12.—*Human Life; Illustrated in my Individual Experience as a Child, a Youth, and a Man.* By HENRY CLARKE WRIGHT. 12mo., pp. 414. Boston: Bela Marsh.

The objects aimed at by the author of the present work, "is to present human life as it is illustrated in the thoughts, feelings, actions, and resolutions of an individual human being; the other is, to show the absurdity of that religion which sends us away from the earth, and all human relations and obligations, into unknown regions, there to find something to love and worship as God." He believes "in a God of justice and love; who made man, and put him on laws which are holy, just, and good, and which cannot be violated with impunity," and "though He exists separate from, and independent of, man and the universe, yet He cannot be truly loved and worshipped by us only in the exercise of affection, and of just and kindly offices toward our fellow men." The story of the author's life and opinions is written in an easy, transparant style that must impress every candid reader of its truthfulness and fidelity. Well-written biography, and especially autobiography, has ever been to us a source from which we have drawn the most unmingled consolation and delight. A more interesting specimen of this species of writing, it has seldom or ever been our good fortune to encounter.

13.—*Memoir of Hiram Withington, with selections from his Sermons and Correspondence.* 12mo., pp. 189. Boston: Crosby & Nichols.

We have in this little volume a record of the life of a clergyman of the Unitarian Church, with extracts from his diary, sermons, &c. His life, though brief and fragmentary, has left an impression, entire, harmonious, and distinct. It is rare that we find in a life so short, and labors so brief, an example of Christian character more attractive, or more instructive. The intellectual and moral power exhibited in the selections from his literary remains, comprised in this volume, in connection with the unblemished beauty of his life, lend a charm to the work, that cannot fail of shedding a halo over every good and gifted mind.

14.—*The Art Journal.* For July, 1849. London & New York: George Virtue.

The present number contains three line engravings from pictures in the Vernon Gallery, equal to any that have enriched the pages of this model work. The numerous engravings on wood, in illustration of passages from the poets, the portraits of eminent artists, and the series of original designs for manufacturers, furnish the best specimens of that style of engraving that we have ever seen. The literary department, or the letter-press illustrations, are in perfect keeping with the masterly efforts of the artists. The three steel engravings from the Vernon Gallery are richly worth the price of the number.

15.—*The History of the United States of America, from the Discovery of the Continent, to the Organization of Government under the Federal Constitution.* By RICHARD HILDRETH. In three volumes. Vol. 2, pp. 579. New York: Harper & Brothers.

We briefly noticed the first volume of this work, on its appearance, in general terms of commendation; and as it is our design to publish an elaborate review of it when completed, our present purpose is merely to announce the publication of the second volume. That it will be regarded as a standard and authentic history of our country, we do not entertain a doubt.

16.—*The Maiden Aunt.* A story. By S. M. Reprinted from the last English edition. 12mo., pp. 246. New York: D. Appleton & Co.

This volume consists of selections from the journal of Miss. Margaret Forde. She was, we are told, "a maiden aunt," possessing that cheerful usefulness, that indefatigable activity in the service of others, that warm, ready, expansive affection, which we are enabled, by happy experience, to pronounce the appropriate characteristic of her genius. The stories of the "maiden aunt" illustrate the characteristics of herself and family in a felicitous manner.

17.—*The Countries of Europe, with Anecdotes and Numerous Illustrations.* By the author of "Peep of Day." 18mo., 320. Philadelphia: George S. Appleton. New York: D. Appleton & Co.

This, aside from the "attempts made at every turning to instil religious (sectarian?) principles," is an interesting book, as it contains a variety of instructive information touching the countries of Europe, presented in an attractive and agreeable form. Its reflections upon Catholics will, of course, exclude it from the firesides of families belonging to that branch of the Christian Church.

18.—*Description of a System of Military Bridges, with India Rubber Pontoons.* Prepared for the use of the United States Army. By CAPTAIN GEORGE W. CULLUM, U. S. Corps of Engineers. New York: D. Appleton & Co. Philadelphia: George S. Appleton, 1849. 8vo., pp. 144.

This work, prepared by an able and scientific officer, who has superintended the construction of some of the most prominent fortifications which have recently been built in our own country, exhibits a system of military bridges that would seem to be of great utility in crossing rivers during a period of war. The text is mainly confined to practical explanations of the mode in which those works should be made; and it is illustrated by numerous tables, showing the details connected with such works, as well as by numerous plates, which tend to increase the value of the volume. We do not doubt that it will do great credit to the reputation of its highly respected and accomplished author. We hope, however, that the time is not distant, when the talent now devoted to the production of the implements and aids of war, will find a more Christian employment.

LETTER FROM THE HON. HENRY CLAY.

Our kind friends and generous patrons, will, we are sure, pardon us for occupying a little space with a letter from that distinguished statesman, and noble hearted man, although of a somewhat personal character. There is no man, at home or abroad, whose good opinion we more sincerely desire to merit, than that of HENRY CLAY:—

ASHLAND, 20th July, 1849.

DEAR SIR:—I wish to express to you the gratification I derived, on receiving the July number of the Merchants' Magazine and Commercial Review, from viewing your portrait in the beginning, and from reading your address to your friends at the end of it. When we feel under obligations to those who have contributed to our information and amusement, we are naturally desirous to possess all the knowledge of them, of their appearance, of the features of their countenance, and of the character and habits of their mind, which we can acquire. You have placed your numerous readers, (at least you have me, if I may not speak for them,) under those obligations; and the number of your valuable work now before me, in some degree satisfies the desire to which I have alluded.

I have become quite familiar with the Magazine and Review, and have no hesitation in expressing my humble opinion that it is eminently entitled to the public regard and support. It collects and arranges, in good order, a large amount of valuable statistical, and other information, highly useful, not only to the merchant, but to the statesman, to the cultivator of the earth, to the manufacturer, to the mariner, in short, to all classes of the business and reading community.

Entertaining this opinion, I am glad that it has been, and hope that it may long continue to be, liberally patronized.

Offering you cordial assurances of my high esteem and regard,

I am truly Your friend
And obedient servant,

H. CLAY.

FREEMAN HUNT, Esq.

We have received several other letters from kind friends and generous patrons in all parts of the Union since the publication of the July number of our Journal, thanking us for our "counterfeit presentment," &c., &c. We should be glad to take them all by the hand, and express in our own proper person our gratitude for their generous expressions of good will. But as that may never occur, they will please accept this public acknowledgment, and the assurance of our earnest endeavors to serve them, by rendering the MERCHANTS' MAGAZINE as instructive and useful, as our humble abilities will permit us to make it.

A merchant at Savannah, enclosing his subscription for the work, takes occasion to say:—"From a constant perusal of your pages, I had began to *feel* as though I was *personally* acquainted with you, though I had never had that pleasure, and your portrait in the July number has heightened that feeling, and, as an old subscriber, I am obliged to you for it. May you long live to enjoy the fruits of your labors, the confidence of the mercantile community, and their undivided support of your efforts to advance the 'literature of commerce.'" If the length of this page did not preclude us from saying more, our *modesty* certainly should! That's all.